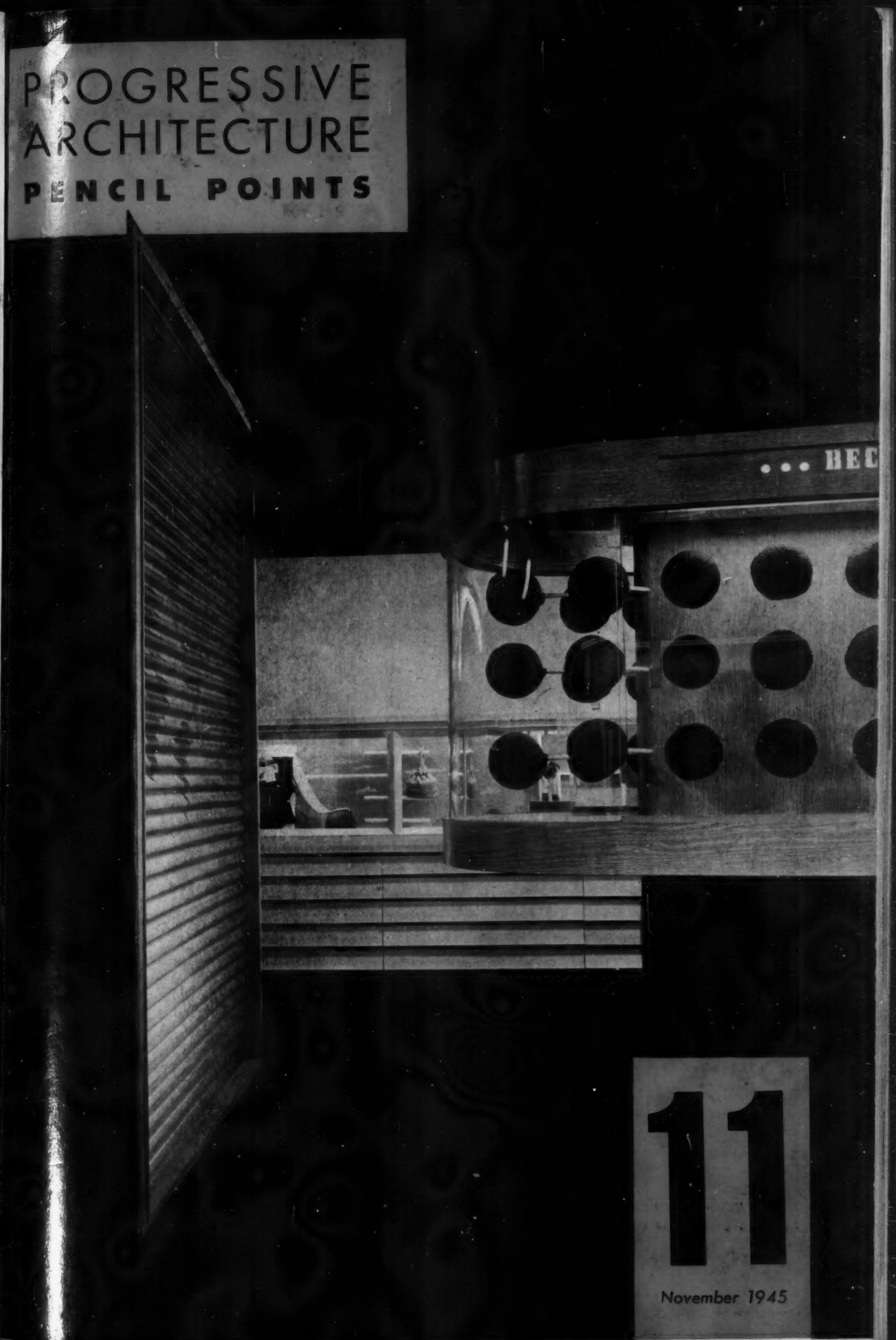
# PROGRESSIVE ARCHITECTURE
## PENCIL POINTS




11

November 1945

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PROGRESSIVE ARCHITECTURE
PENCIL POINTS

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# November, 1945

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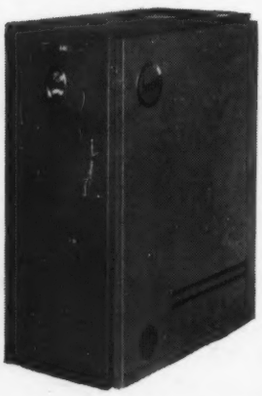
# Postwar THE Most OF GAS HEATING

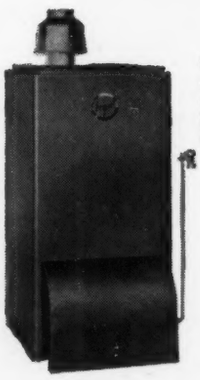
## Boilers

Forty-two different boilers for steam and hot water heating

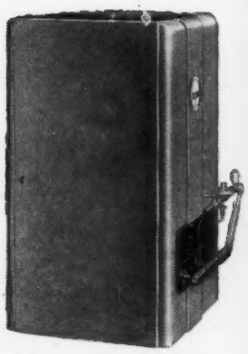
All Bryant boilers have CAST IRON sections for long life and efficient operation



## Gravity Furnaces

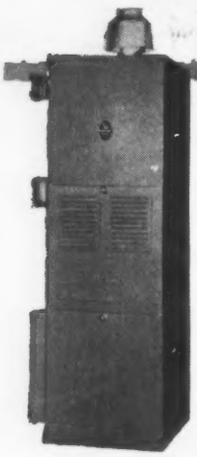


Heavy CAST IRON heating element and baffle plates assure maximum heat and long life for the GF-56 model



Destined to become popular for small homes heating, this STEEL gravity furnace fits the modest building budget

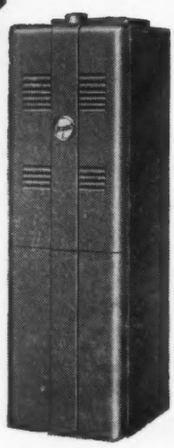
## Winter Air Conditioners



Closet space is sufficient room for the VB model with CAST IRON heat exchanger

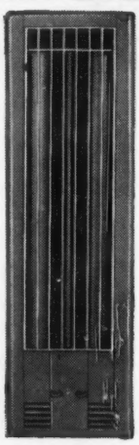
CAST IRON heat exchanger also is featured in the BA-88 model

This basement-type model with STEEL heat exchanger provides complete winter air conditioning economically

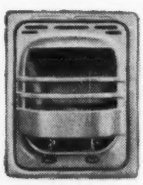


The Vertical model is a moderately priced, spacesaving unit with STEEL heat exchanger

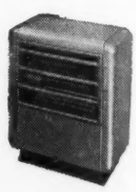
## Wall and Space Heaters



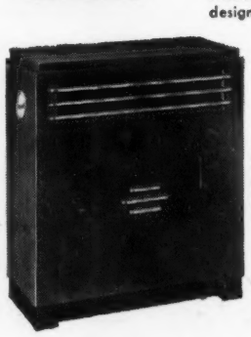
The new Panelray vented wall heater adds beauty and efficient heating to any room in the house



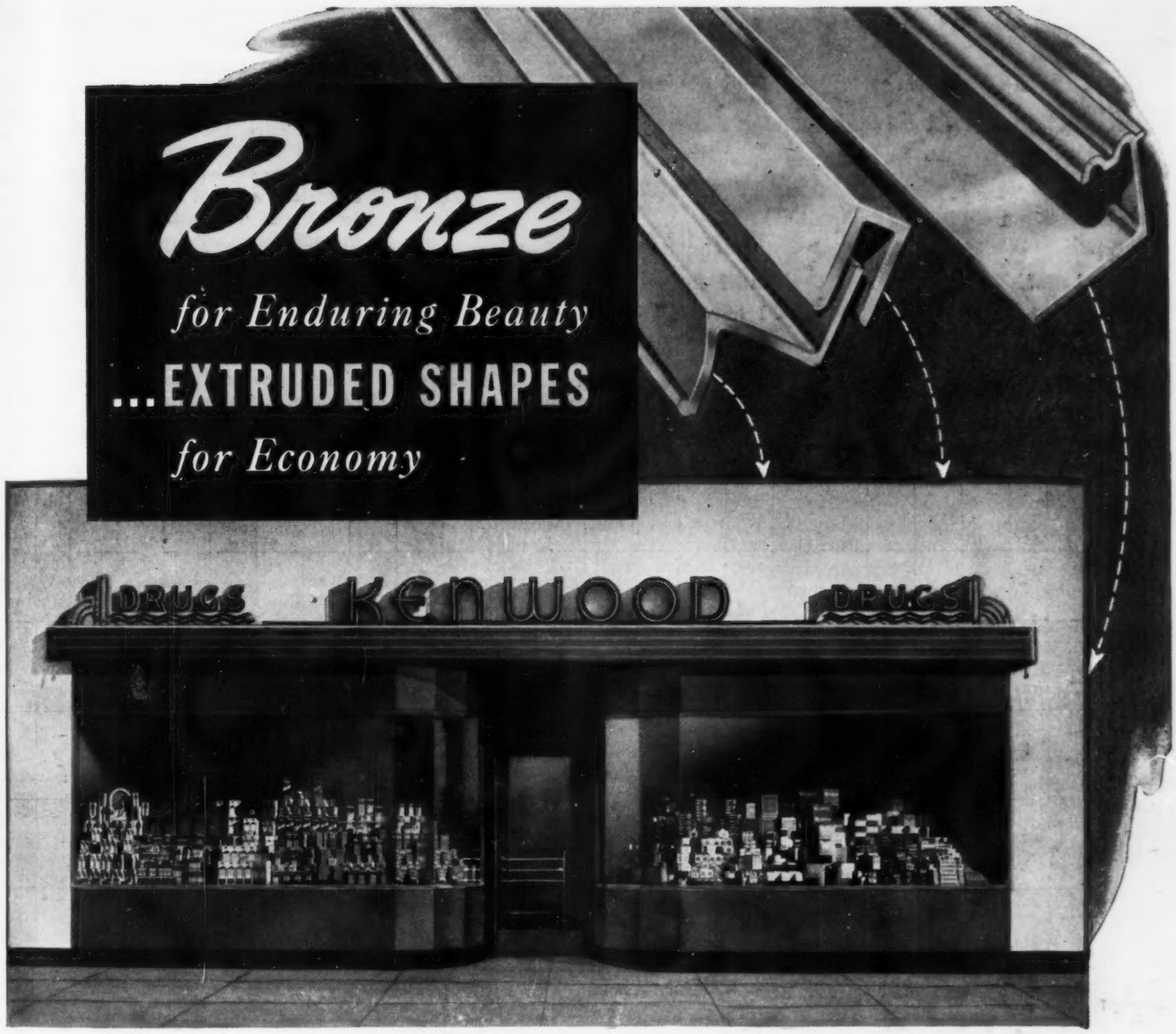
Bryant wall heaters fill the need for moderately priced, non-vented installations



New portable space heaters are built in modern streamline designs



Where circulated heat is required, this Console model does the job thoroughly and efficiently




*Kenwood Drug Company, Omaha, Nebraska. Store Front by Pittsburgh Plate Glass Company, Pittsburgh, Pa. Architects: John and Allen McDonald*

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# Views

### An Open Letter To The A.I.A. President

Dear Mr. Edmunds:

The United Nations will presently decide on a location for their central offices. Unless the old League of Nations buildings are used, this means that a great new planning and architectural complex is to be designed, probably the most significant of our times and one which should enlist the most enlightened participation and the fullest international cooperation of which the architectural profession is capable.

If the Center is located in Europe, the architectural associations there will quite properly take the lead in proposing how this enterprise shall be carried out. If it is to be in this country, however, initial guidance should come from The American Institute of Architects.

Would it not be appropriate to appoint a Committee entrusted with the responsibility for study and recommendations on this matter? And further, would it not be possible to canvass the membership for opinions as to *how* such a project can most successfully be designed and carried out? The traditional competition method has many limitations. Have we as a profession developed any other method which will result in better solutions and yet be fair to the great group of creative architects and planners in all countries?

As an interested citizen and architect of San Francisco, I was one of a group to put forward a concrete proposal for a United Nations Center, simply to open up the discussion. Now that decision on the location of the Center approaches, however, it becomes vitally important for some definite plan to be developed whereby the ideas and participation of all interested architects and planners in all the United Nations may be enlisted.

The atomic bomb was achieved because scientists were able to pool their abilities and experience on an international basis. For a building which will be the physical symbol and instrument for world cooperation, can the architects do less?

WILLIAM W. WURSTER, Dean
School of Architecture and Planning
Massachusetts Institute of Technology

### Our Friends Afar

Dear Editor:

It is very gratifying to express to you the excellent impression caused in this School of Architecture by the organization of your contest, "A House for Cheerful Living." The magnificent issue of the magazine containing the winning projects has been much appreciated.

JORGE TOGUERI, President
CARLOS A. MENDOCA PAZ, Secretary
Buenos Aires, Argentina

### Homes for All

Dear Editor:

I have just read the very interesting editorial in the July issue of PENCIL POINTS. It touches on a matter of vital importance to all of us. An average of a "million dwelling units a year for at least ten years" is clearly a matter of public concern.

In the past, as you pointed out, less than 20 percent of the Small Houses of America had the benefit of an architect's services. The result is appalling, not only in the quality of the houses considered from the owners' point of view, but from that of the public at large which must perforce view these lamentable examples at every turn. This amazing inefficiency cries out for an enlightened policy on the part of all concerned.

Your point that the hapless owner, limited in resources, naturally chooses the contractor or builder as his designer or architect—since he cannot afford both—is certainly unarguable. What else can he do? Nor can the architect possibly afford to give individual attention to those million dwelling units unless his rate of compensation is adequate. But such a solution is precluded in the nature of the case by the very limited scope of the operation—at least in respect to the individual house.

While prefabrication and large-scale housing developments will help to solve this aspect of the problem, they are inadequate in meeting the full scope of the problem as it is destined to present itself in the immediate future. What then?

*"What in the world are people with our incomes doing at a small house exhibition?"*

*Copyright 1945 The Newspaper PM, Inc.*

Your own suggestion is constructive, certainly. But it has inherent difficulties, one of which is that architects rarely have the capital necessary to become builders—at least such architects as have devoted themselves to the thankless work of doing small-scale domestic and residential work. There are, in addition, other professional problems involved, as you yourself suggest. But of course any solution of this thorny problem is certain to have its own difficulties. Bearing that in mind, may I offer a suggestion?

I am convinced that the larger the point of view the more likely one is to stumble upon a solution of a given problem. In this instance I am convinced that the problem concerns the public—not only because a million living units a year represents the interest of a considerable fraction of the public in itself, but also because all of us are affronted by the plague of bad housing which has disfigured our landscape and our localities throughout America in the past and promises to spread even more disastrously in the future. And the architects, unlike the doctors who rise to the challenge of a public plague, have passed over this problem in silence as though they didn't suffer along with the rest of the public while the countryside is being desecrated before their eyes! Frankly, little was to be hoped for from men who dealt with individual clients of means in a problem concerning precisely those without means. Is there no way out of this impasse?

If the problem, seen in wide perspective, is indeed a public problem, if it affects intrinsic values, esthetic and economic, throughout the countryside—cannot the public solve it? In brief, if the individual as such, cannot afford the essential services of the architect, cannot the public afford it? Medicine leaves us in no doubt in respect to a comparable question and a comparable answer.

I am speaking of a public subsidy for a public service. Difficult and complex to initiate and administer, no doubt, but rewarding to all concerned—the home owner, the architect, the public. We have not hesitated to demand sanitary regulations with respect to individual residential enterprises to protect both the owner and the public. The blight of poorly designed, poorly constructed, and poorly executed dwellings has in the past been accepted as an ineradicable evil, where it has not been flaunted as a sign of our individual liberty to do as we each of us damned pleased. This attitude has cost us dearly in all the values that count—economically, esthetically, socially.

Nor, looking at the matter from another angle, have we hesitated to extend subsidies to whole sectors of the community where and when it was deemed public policy so to encourage otherwise lagging aspects of the highly integrated community. In the instance here under con-

*(Continued on page 10)*

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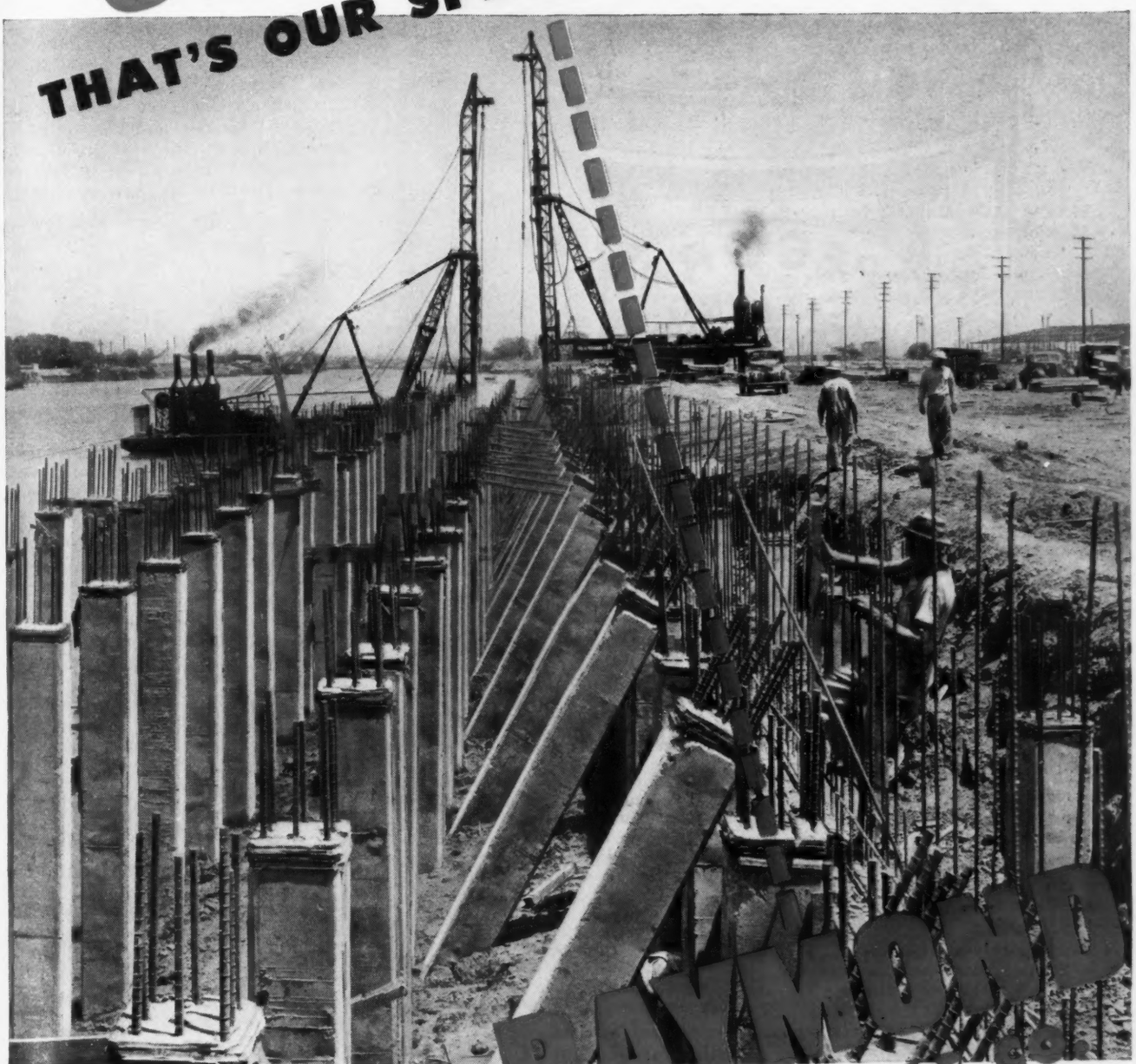

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# Views

*(Continued from page 8)*

sideration, we have indeed all the elements necessary for a solution of the problem—excepting perhaps the initiative to put them together. We have the necessary professional talent, the necessary means, the crying need—all but the necessary mechanism for bringing these factors into a functioning harmony.

Much has been said in recent years concerning the role of the architect in relation to the community as a whole. Thanks to the past, architects were an unknown quantity in the eyes of the public since they dealt with the "pecuniary" upper level only. Today the profession is suffering for its former isolationism. Perhaps, in the problem here under consideration, an opportunity is at hand for a wider public acceptance of the architect's function in the community—a function that will extend, that should extend, beyond the individual commission to a more integrated sense of the design problem of the community as a whole.

RODERICK SEIDENBERG

Pipersville, Pennsylvania

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## THEY SAID — WE QUOTE:

. . . Generally the quality of the wartime housing has been somewhat lower than that of the prewar years. While partly ascribable to the costs and shortages of materials, this is also due to the fact that housing in Sweden has passed the glamour stage, and is now entering a period in which the main efforts must be directed towards a solution of the difficult problem of providing more, and more adequate, housing for the broad masses of the people.

**Business News Letter**
*From Sweden*

In 1940 crowding was more general in rural than in urban homes. In the latter 9 percent of the homes exceeded the minimum measurement of overcrowding, while 16 percent of the farm homes exceeded that figure. In the South it was 25 percent. Because farm families are scattered in the byways and away from the highways of the nation, this condition is little appreciated and overcrowding is generally only associated with city slum living.

**Mrs. Samuel I. Rosenman**
*Before: Working Conference on Farm Housing University of Kentucky*

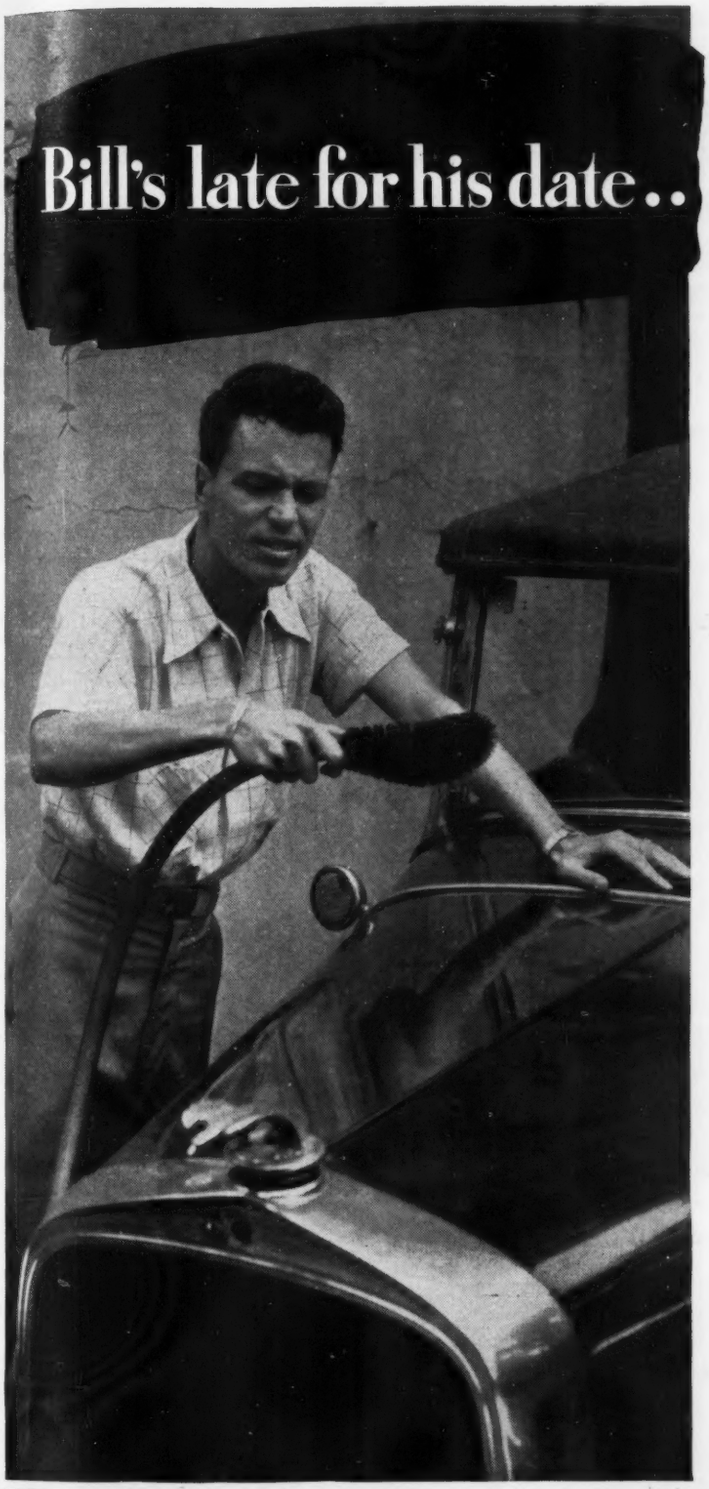
Plants should be designed solely for operating efficiency and not as architectural monuments. The one-story plant can be both, if desired. You can, in short, do anything in a single-floor building that can be done in any other. And such a building is cheap to build, easy to maintain and inexpensive to operate.

**Francis Chilson**
*Plant Consultant*

God forbid that the atrocities of W.P.A. art should be repeated after this war—stylized, symbolic, dehumanized people representing Fishing, Farming, Fire Insurance, Pan Americanism, Peace and Penicillin, or what not, who look as if a drunken woodsman had hacked them out of an old oak with a dull axe, inanimate, frozen eagles with bell-bottom trousers, bronze Mongoloid cigar store Indians, gaudy, abstract, geometrical horrors, distorted freaks, and barroom frescoes. I do not say no good was to be found in W.P.A. art. I merely insist that the search was like getting nourishment out of an artichoke or mining for a pinch of radium in the side of a mountain. Let us, in Heaven's name, have no more talk of a cabinet post for the fine arts, because government control, as distinguished from government encouragement, means the triumph of the lowest common denominator.

**Robert Moses**
*Before: National Sculpture Society*

**—UNQUOTE!**

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# ...Because Mary's cleaning up for hers

WHEN it's double "date night" for Bill and Mary, let's have no interference or argument as to who draws the first water.

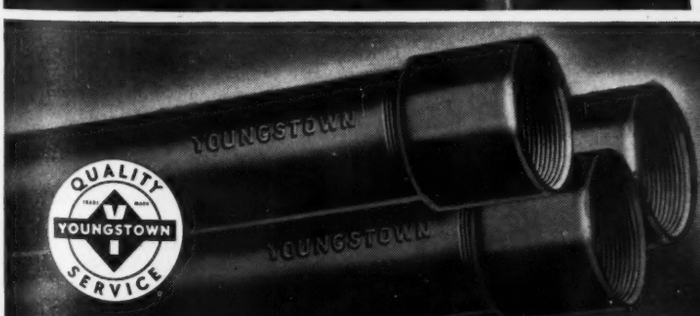
After all, you can't blame Bill for wanting to spruce up the car before stepping out with that swell gal he met last night. And it's not Mary's fault she wants to freshen up before her date with her "Big Moment."

The guy at fault is the man who put in water pipes of too small diameter, which just can't carry the load to the shower and Bill's car washing job at the same time. He didn't look ahead to realize that Americans are needing and using more and more water all the time.

So...if you're the one who is to be responsible for some of the water systems in America's millions of new homes, if your modernizing old homes, too-you owe it to your clients to figure on greatly increased use of water. Remember that city water pressures are constant. Solve your plumbing problems by installing steel pipe of greater diameter that will carry an adequate water load for present and future needs.

And don't forget the new equipment whose lifeline is the water pipe--automatic laundries, dish washers, garbage disposal units, as well as the extra lavatories and showers which loom largely in post-war blueprints.

Do a good job for Bill and Mary and the rest of the family by guaranteeing plenty of free-flowing water with adequately sized steel pipe.

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ARCHITECTURAL DRAFTSMAN wanted. Experienced on school work. Make application in writing, stating experience, qualifications, age, and salary expected to Hacker & Hacker, Architects, Fort Lee Trust Company Building, Fort Lee, N. J.

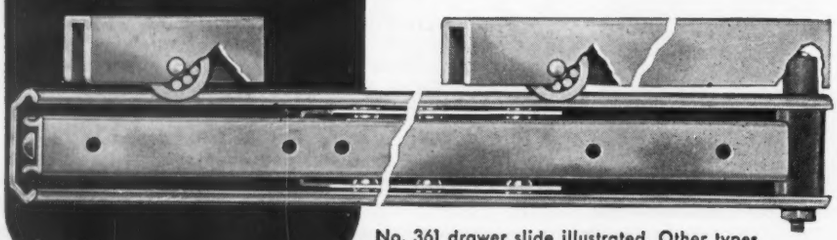
*(Continued on page 14)*


FOR *Fingertip Control* OF DRAWERS *specify*

**GARCY**

METAL BALL BEARING **DRAWER SLIDES**

New homes will be built with more drawers than ever. Will they be the kind that stick and jam, fall out and strew their contents over the floor? Not if you specify inexpensive, easy-to-install GARCY drawer slides, the slides that keep drawers rolling smoothly and effortlessly, defying time and weather.



No. 361 drawer slide illustrated. Other types available for every drawer or shelf slide-out problem.

- Even wide, heavily loaded drawers pull out at a touch, No sticking or jamming.
- Ball bearing action...smooth and quiet.
- Rubber bumpers prevent slamming
- Drawers pull out all the way. All contents easily reached.
- Drawers easily lifted out, but cannot fall out.
- Standard lengths from 15" up.

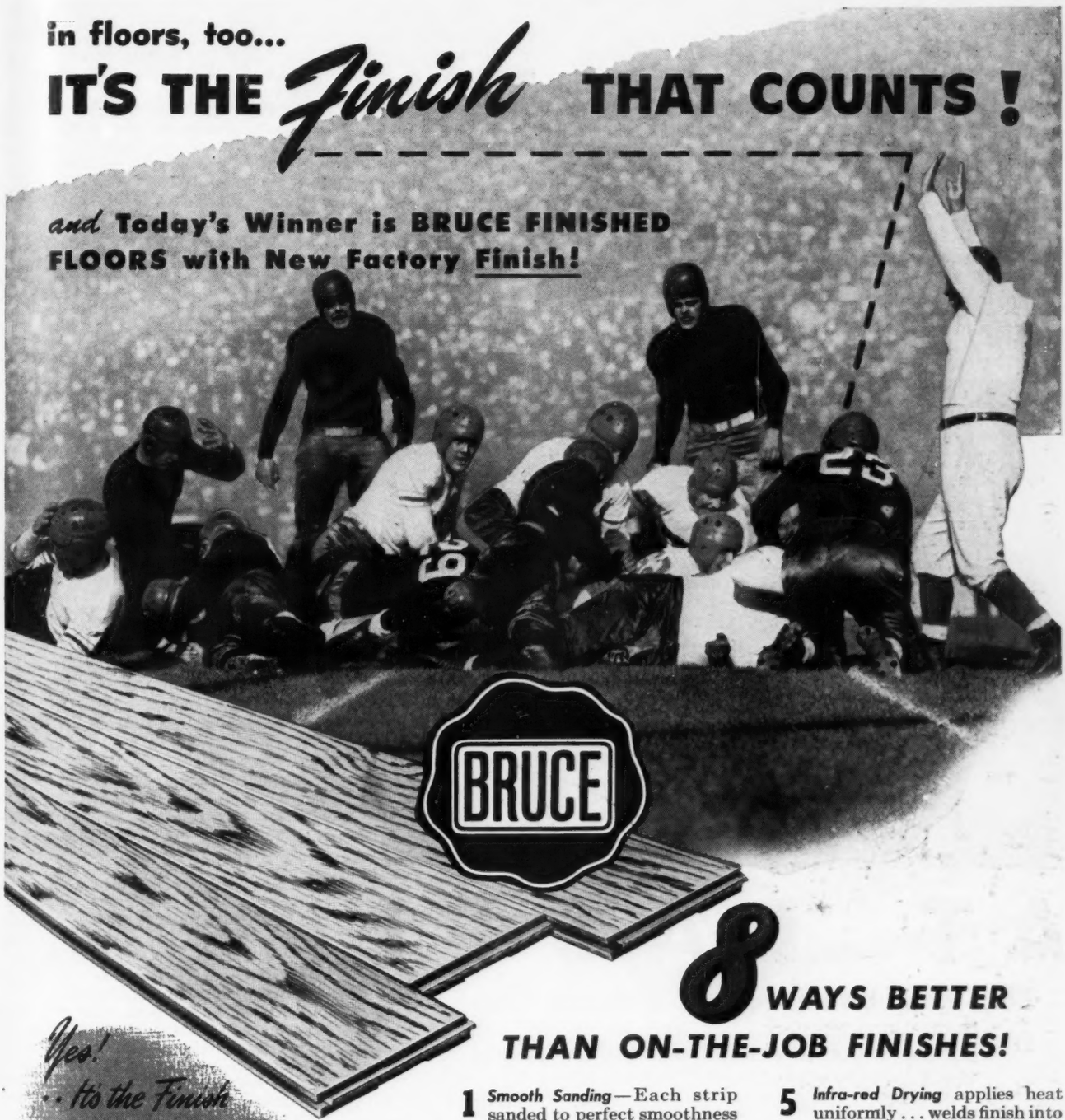
FOR COMPLETE DRAWER SLIDE DATA—ASK FOR BULLETIN 39-30

GARDEN CITY PLATING & MFG. CO., INC.
Ogden Blvd. & S. Talman Ave., Chicago 8, Ill.

in floors, too...

# IT'S THE *Finish* THAT COUNTS !

*and* **Today's Winner is BRUCE FINISHED FLOORS with New Factory Finish!**




*Yes! . . It's the Finish that Counts in Floors!*

Home builders will want Bruce Finished Floors . . . because millions of attention-holding advertisements have sparked their interest in this modern flooring . . . millions more are making new friends and customers for Bruce. In leading magazines! Again and again! Yes, Bruce Finished Floors can truly be called America's most wanted floors!

**E. L. BRUCE CO.**
**MEMPHIS 1, TENN.**

## 8 WAYS BETTER THAN ON-THE-JOB FINISHES!

1 ***Smooth Sanding***—Each strip sanded to perfect smoothness on multiple drum, precision sanders. No sander marks.

2 ***Prime Condition***—Finishing starts immediately after sanding, so no "raised grain." Moisture content of flooring is right.

3 ***Perfect Filling***—Highest quality silex filler is rubbed into wood as flooring moves down the finishing line.

4 ***Thorough Sealing***—Bruce Finish penetrates into wood pores . . . seals them against dirt and wear. Beautifies wood grain.

5 ***Infra-red Drying*** applies heat uniformly . . . welds finish into a tough, even film. No "unfavorable drying weather."

6 ***Extra Buffing*** with high-speed brushes burnishes finish into wood . . . provides a harder, smoother surface for waxing.

7 ***Superior Waxing***—Special wear-resistant wax is applied evenly, then polished over and over with brushes and buffers.

8 ***Proper Seasoning***—Finishing done weeks before flooring is used—so no hazard of finish being walked on too soon.

**BRUCE FINISHED FLOORS**

## Views

*(Continued from page 12)*

EXPERIENCED ARCHITECTURAL DRAFTSMEN wanted, capable of complete development of working drawings for highest type of residence work, housing, apartments, and public buildings. Give full details, age, education, experience, examples of work, salary expected, and when will be available. Steady work and can provide good living quarters. Willis Irvin, Architect, Augusta, Ga.

ARCHITECTURAL DRAFTSMAN wanted with rich background of construction experience. Versatility important. Modern studios, excellent future, good salary. J. Gordon Lippincott & Co., 500 Fifth Ave., New York, N. Y.

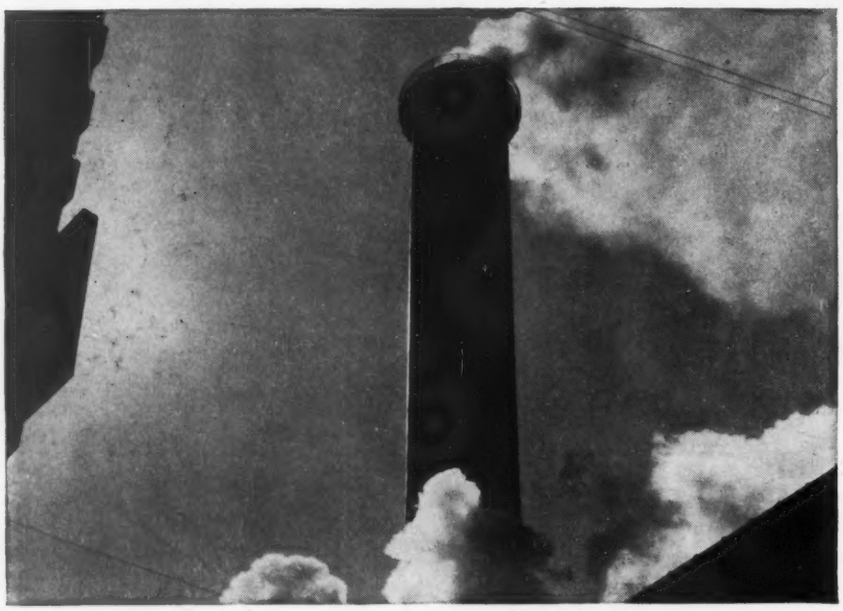
STORE PLANNERS wanted. Draftsman for planning and designing store interiors. Must be familiar with store fixture work for designer's office located in New York City. State age, experience, and salary required. Box 176, PROGRESSIVE ARCHITECTURE.

EXPERIENCED GENERAL DRAFTSMEN wanted by architectural office in Midwest. Box 191, PROGRESSIVE ARCHITECTURE.

ARCHITECT wanted. Experienced in industrial layout, service station design, and general building construction. Experience in petroleum industry preferred. Permanent position; located in Mid-Continent area with large oil company. Box 193, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DESIGNERS, DRAFTSMEN, DETAILERS wanted by nationally known manufacturer of store-fronts, entrance doors, and new postwar building materials. Permanent positions with exceptional opportunities for thoroughly experienced men. Prefer men under 40 years of age. Write Box 196, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DESIGNER-DRAFTSMEN, develop working drawings for schools, hospitals, churches, and other institutional buildings. Location New York City. Exceptional opportunity, good prospects, and established future for capable men. State experience, age, education. Box 198, PROGRESSIVE ARCHITECTURE.

# AT LAST!

At last the first smoke of peaceful days streams from America's stacks . . . and we eagerly wait the day when we can tell you that the postwar Von Duprins are ready.

As soon as men and materials are available, these finer devices will begin to come off the assembly lines.

They will be the best devices we know how to build. In them will be incorporated all that we have learned in thirty-seven years of study and effort. These Von Duprins will be the safest, surest, fastest panic devices ever built...and well worth waiting for!

### SITUATIONS WANTED

ARCHITECT, age 37, registered in New York and Pennsylvania. 13 years' varied experience, including own practice. Desires connection with progressive firm of architects, leading to association or partnership. Ability to handle complete project, including all phases of office work, interviewing clients, superintending construction. Box 192, PROGRESSIVE ARCHITECTURE.

ARCHITECT, age 35, married, college graduate, 10 years' experience, registered in two states, desires a position leading to a partnership. Prefers Southeastern states. Box 194, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DESIGNER, 33, married, desires permanent position in progressive East or West coast firm. Future possibilities of major importance. B.S. in Architecture; 6 years with two reputable New York and San Francisco architects; 3 years, field engineering naval air base construction. Service release before Christmas. Box 195, PROGRESSIVE ARCHITECTURE.

ARCHITECT, registered in New York, licensed engineer and L.S. (N.J.), college education, 27 years diversified experience, planning, specifications, field supervision and layout, and executive experience; residential, commercial, and industrial buildings; seeks position as specification writer, chief draftsman, project manager, or architect's superintendent. Location immaterial. Box 197, PROGRESSIVE ARCHITECTURE.

ARCHITECT, age 37, registered in Massachusetts. Thirteen years' experience on varied work. Versatile background with preference for contemporary design. Desires connection with progressive firm offering possibilities of association or partnership. Box 199, PROGRESSIVE ARCHITECTURE.

### NOTICES

HARVEY P. CLARKSON, Architect, who was associated with SERGE P. PETROFF in the design of the Sunrise Dairies shown in this issue, has opened an office for the practice of architecture at 26 East 55th St., New York City.

MICHAEL R. D'ORSI, Architect, announces the reopening of his office for the practice of architecture at 184 Boylston St., Boston 16, Mass.

*(Continued on page 16)*

# Build Lasting Strength
## INTO CAVITY WALL CONSTRUCTION

● To those buildings on your boards calling for cavity wall construction, you can add years of life by the use of Copperweld Wall Ties—and banish forever the bug-a-boo of wall failure induced by tie corrosion.

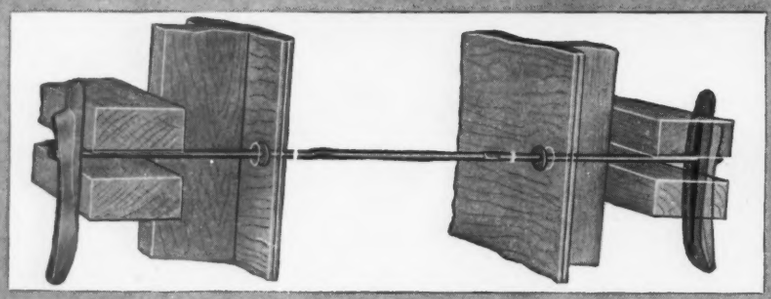
These ties are manufactured of high tensile alloy steel wire heavily covered with copper by the Copperweld molten-welded process. They are immune to chemical action within the wall. Moisture may penetrate the wall and reach the tie many years after the completion of the building—but the ties, protected by copper, will remain unaffected. Consequently, the breaking strength of this tie, about two tons, remains constant for the life of the building.

Building supply dealers now have Copperweld Wall Ties. Specify them on your next cavity wall job with every assurance that they will meet the test of time. Copperweld Wall Ties are recommended by the Structural Clay Products Institute.

*Descriptive Literature on Request*

**COPPERWELD STEEL COMPANY**
**Glassport, Pa.**
OFFICES IN PRINCIPAL CITIES

# RICHMOND SNAP-TYS SPEED Light Concrete Wall Form Construction



**Richmond Snap-Tys are 3,000 lb. safe load tie units designed particularly for light foundation wall form work. The tie shown above is 1" break type with flat spreader washers. Metal cone ¼" break type and Wood cone 1" 1½" or 2" break type are also available.**

*Richmond Snap-Tys assure:*

Form work—Secured straight and true to line.

Spreading action—Forms spaced by tie for correct wall thickness.

Wall finish—to specification—tie metal set back, as required.

Elimination of Wood spreaders.

Economy of operation.

*100,000 sold 1933* *6 Million sold 1940*
*Over 10 Million sold 1942*

- RICHMOND OFFERS—consultation on best types of forms and ties for a given job.
- RICHMOND SNAP-TYS are packed in CARTONS.
- RICHMOND TYHOLDERS—known as "Working Parts", are furnished.
- RETURNABLE FOR FULL CREDIT—no rentals charged.

Form-Ty Engineering Guide and Snap-Ty Book Available on Request

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816 LIBERTY AVENUE, BROOKLYN, N. Y.
MANUFACTURING SINCE 1911


# Views

*(Continued from page 14)*

THE H. E. BEYSTER CORPORATION, architects and engineers, will move from the General Motors Building to larger quarters in the Industrial Bank Building, Washington Boulevard at Grand River, Detroit, Mich.

FRANCIS JOSEPH MCCARTHY, Architect, is now located at 693 Mission St., San Francisco 5, Calif.

The firm of TINSLEY, HIGGINS AND LIGHTER, Architects, is now located at Liberty Building, Des Moines, Iowa.

MORGAN STEDMAN announces the opening of an office for the practice of architecture at 180 University Ave., Palo Alto, Calif.

SELVAGE & LEE, Industrial Public Relations, have opened a Chicago office at 1726 Field Building.

FREDERICK W. KIRCH, THEODORE POSTMA, AND WILLIAM D. RAFFEL have opened an independent model and design shop at 402 E. 64th St., New York 21, N. Y. They are equipped to execute any type model in every existing medium.

LOUIS A. LAMOREUX has reopened his office at 904 Farmers Bank Building, Mansfield, Ohio, after returning to inactive duty from the Corps of Engineers.

WYMAN WALKER, Architect, has moved into new offices at 804 Persons Building, Macon, Ga.

LOUIS LIEBERMAN has reopened his office for the practice of architecture at 44 Court St., Brooklyn 2, N. Y.

F. ARTHUR HAZARD, Architect, Augusta, Ga., announces the opening of a branch office at 11 Johnson Building, 332 W. University Ave., Gainesville, Fla.

BORIS W. DORFMAN, Architect, announces the removal of his office to 44 Court St., Brooklyn, N. Y.

H. VERNON LEE, Architect, has reopened his office at 11 Briarcliff Rd., Mountain Lakes, N. J.

N. A. HABERSACK, Architect, announces the removal of his office to 154 Nassau St., New York, N. Y.

JOHN JACOB MATTERN, JR., announces the opening of his offices for the practice of architecture at 110 North Seventh St., Richmond, Va.

FRANK C. DELLE CESE announces the opening of architectural offices at 1011 First National Bank Building, Utica, N. Y.

JONES AND MARSH, Architects, announce the removal of their offices to Concord Building, 208 S. W. Stark St., Portland 4, Ore.

AARON COLISH, Architect, has moved his offices to 1717 Sansom St., Philadelphia 3, Pa.

IT'S PRACTICAL...

IT'S STYLISH...

IT'S WANTED...

The Corbin Residence Unit Lock

For the first time . . . a CORBIN *UNIT LOCK* for homes . . . a lock as smart as it's sound . . . offering STRENGTH, STYLE and amazing EASE OF INSTALLATION! Streamlined version of the famous Unit Lock pioneered by Corbin in 1899 that is installed in hundreds of important office and public buildings, the new residence lock offers all the advantages of its commercial counterpart.

Because the lock is a complete unit assembled at the factory and only two saw-cuts instead of drilling or mortising are required, installation is simple and fast.

Architects may specify the Corbin Unit Lock for residences and small apartment houses with assurance that in function, "feel" and owner satisfaction it is a new note in residence builders hardware.

*Quick Facts*

- Ease of installation heretofore unknown for residences
- No boring, no mortising for lock case — 2 saw-cuts opening, knock out block, install
- Complete factory assembly
- Easy closing due to pivoted (swinging) latch
- For 1⅜" thick doors
- Eye-appealing 2" knob
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- Complete masterkeying for key locks when desired
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# News

**Revocation of the WPB Order L41—which had become to the construction industry a symbol of all Governmental control—served last month to lift clouds of gloom from the future of industry.**

The word battle among spokesmen for trade associations and governmental agencies had been spirited for weeks before the decisive step was taken. L41 met its end on October 15. But before that time industry leaders were making their plans to step up the tempo of activities as soon as controls were lifted. First word that the order was doomed came through late in September and the ensuing weeks were devoted to a flood of "I told you so" news releases —and a few tangible results.

At the invitation of Eric Johnston, president of the Chamber of Commerce of the United States, representatives of about 80 trade associations and related groups were expected in Washington on November 1 to band together as the Construction Industry Advisory Council. The intent was to work out the varied problems of the construction industry amid the postwar confusion of material shortages, labor dislocations, inflated costs, and real estate prices. Those attending the conference were to hear from spokesmen for the Government, as well as industry leaders.

When Hugh Potter, Texas developer and real estate authority, was named Federal Construction Coordinator some weeks ago, he announced his intention of putting builders to work on the millions of housing units now urgently needed. He predicted that restrictions on the construction industry would be "removed by Christmas" and that it would be possible to "build at least 500,000 homes in 1946; and after that a million a year."

Another encouraging note was sounded by Raymond M. Foley, FHA Commissioner, when he announced that expanding home construction in the next 12 months will offer large opportunities for employment in the building and allied industries "including workers needed in the mines, forests, factories, and transportation." He also has made it clear that he counts upon private industry to provide "the great bulk of the nation's postwar housing need—variously estimated at 1,000,000 to 1,500,000 for ten years."

Private business, according to the Chamber of Commerce of the United States, sees "the way clear to at least 7,000,000 jobs" since revocation of L41. The industry was stirred into activity, but it is pointed out that it will take all winter to accumulate a reasonable supply of building materials and equipment—that it will be next spring before this can be accomplished—that the country already needs 8,000,000 new homes for returning veterans, for other families without homes of their own, and for families forced to live in substandard dwellings.

There are warnings too! John B. Blandford, Jr., National Housing Administrator, reminding that there are serious housing shortages in practically every city in the country and that in many areas "these shortages will become more acute during coming months as millions of veterans return to civilian life," fears inflationary price increases. Acknowledging that a sharp rise in the prices of existing houses has resulted from the demand "greatly in excess of the available supply," Blandford added: "Unless a majority of the new houses which are produced in the next few years are within the means of average American families, there is the very real danger of a short-lived boom in home building, followed by an abrupt decline such as occurred in 1920 after the first World War."

At almost the same time, L. C. Hart, president of the Producers' Council, Inc., defined additional problems to be solved for the building industry before the housing shortage can be eased materially. Veteran of many a dispute with the OPA over construction controls, Hart acknowledged that the end of L41 removed a major obstacle in the way of reviving residential construction, but insisted:

"First, the OPA must adopt a realistic policy toward the pricing of building products and, second, the construction industry must be given assurance that plans for controlling the prices of new homes will be abandoned.

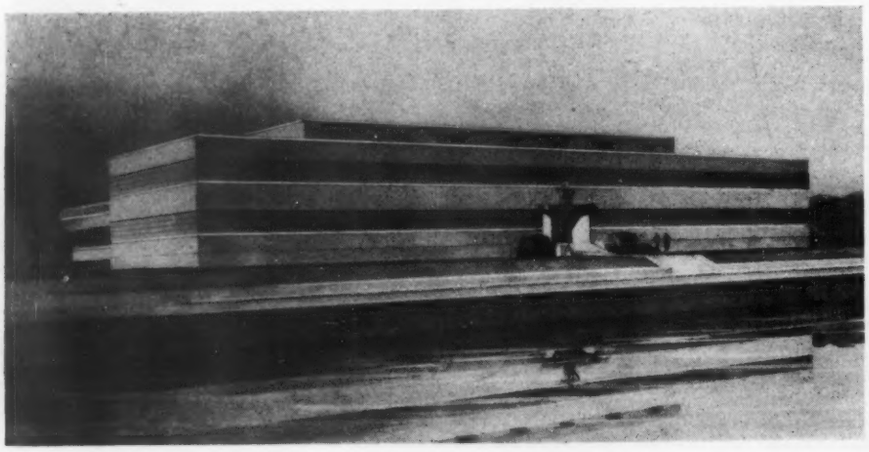
"The OPA plan for setting ceiling prices on each individual new home and for regulating the profit margins of local contractors and dealers is completely unworkable and unnecessary and would effectively prevent any large volume of residential construction."

Later amplifying his view of the proper approach for development of the construction industry, Hart pointed out: "Everyone in the industry recognizes that building activity can be revived more quickly and that employment in construction can be stepped up faster if every branch of the industry will cooperate to the fullest possible extent in preventing unjustified increases in the cost of building products, of construction services, and of finished homes and other structures."

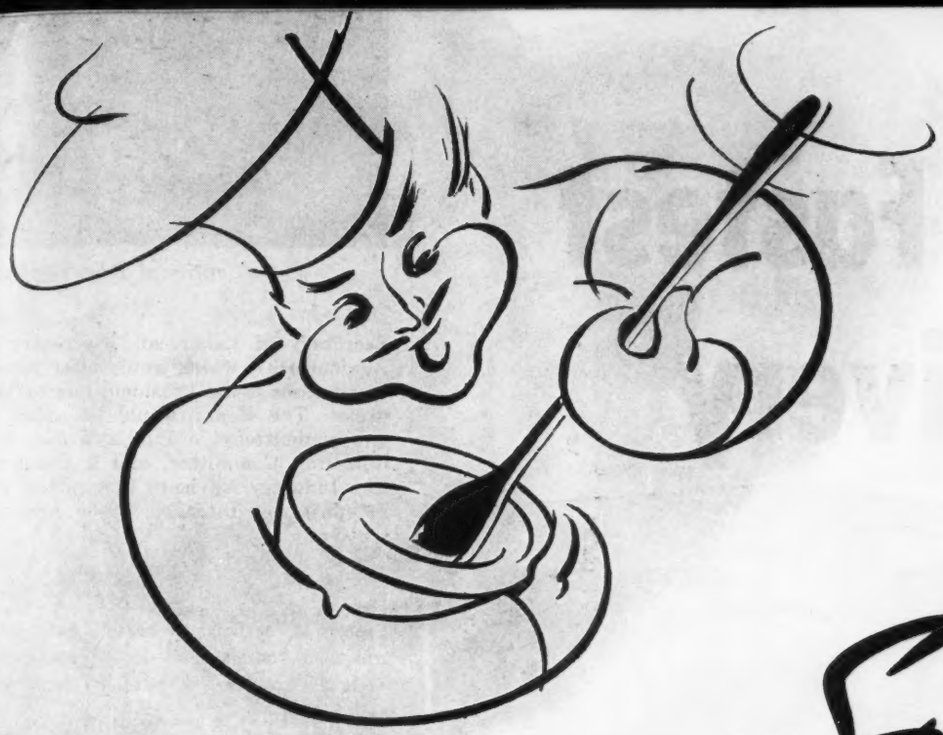
Appearing before the Stewart subcommittee of the Senate Small Business Committee, Douglas Whitlock attacked as "unworkable, dangerous and unnecessary" the OPA proposal to set a price ceiling on every new house. He stated, however, that the industry is *not* asking now for the removal of price ceilings on construction materials and equipment—provided the pricing program is administered so as to insure an adequate supply. He appeared as a spokesman for both the Producers' Council, Inc., and the Chamber of Commerce of the United States.

Early last month, a bill for advanced planning of public works, Construction Stabilization Act of 1945, was introduced in the Senate by Sen. James E. Murray of Montana. It is his hope that the bill will be "effective in securing a steady expanse of construction activity and in maintaining a high level of employment in our most important non-agricultural industries." It would create a Construction Policy Board (Secretary of Commerce, Chairman,

*(Continued on page 24)*



*First on the peacetime expansion program of the Allegheny Ludlum Steel Corporation is the $2,000,000 Research Laboratory and Experimental Center (left), designed by William Y. Cocken, of Janssen & Cocken, Pittsburgh, Pa. In this Laboratory, air conditioned to safeguard complex experiments and delicate scientific instruments, experts will undertake fundamental and applied research of highly specialized stainless, magnetic, valve, tool, and other complex steels. The site is Brackenridge, Pa.*



# THERE'S SOMETHING *Stirring* IN PORCELAIN ENAMEL

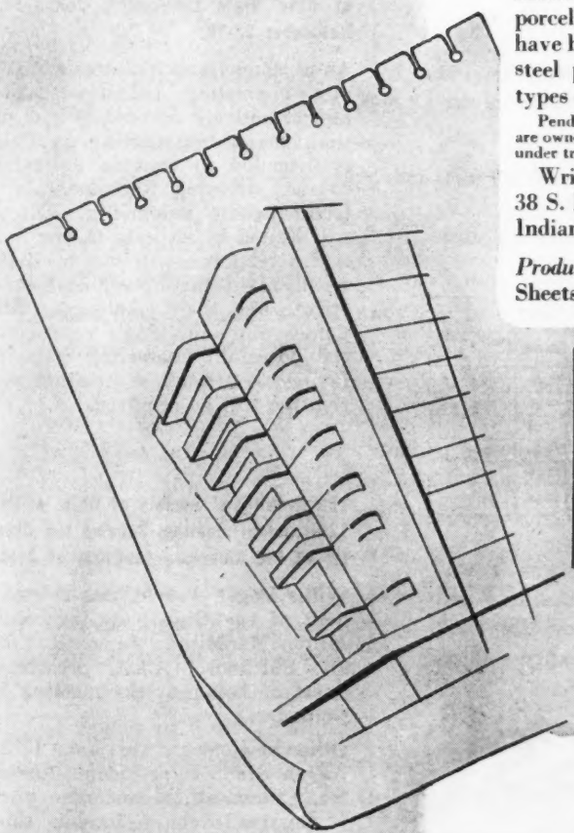
Something very important to architects is going on in porcelain enamel. It all started several years ago when Inland instituted an intensive research program to find a better porcelain enamel base.

Within recent months many trial shipments of the new alloy steel sheets have been sent to enameling shops, where they have been porcelain enameled under actual production conditions. The results have been remarkable and Inland Ti-Namel—the new titanium alloy steel porcelain enameling base—has proved its superiority for all types of units required in architectural design.

Pending patent applications on the new enameling process and product made thereby are owned jointly by Inland Steel Company and Titanium Alloy Manufacturing Company under trust agreement.

Write for a copy of the new Ti-Namel Bulletin. Inland Steel Company, 38 S. Dearborn St., Chicago 3, Ill. *Sales Offices:* Cincinnati, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul.

*Products:* Bars, Floor Plate, Piling, Plates, Rail, Reinforcing Bars, Sheets, Strip, Structurals, Tin Plate, Track Accessories.



## INLAND TI-NAMEL

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# News

*(Continued from page 22)*

Secretary of Labor, and Secretary of Agriculture), which would offer recommendations to the President and to Congress. The Board would be aided by two committees: a Public Works Stabilization Committee, and a Construction Industry Advisory Committee. The setup is not intended to be administrative.

**Experts in the fields of housing and heating will meet November 14—16 at Pennsylvania State College for a five-session conference.**

Included on the program will be discussions on housing needs, basic elements of construction for heating with solid fuels, advances in heating equipment, engineering and research developments, and merchandising trends. The open conference will be sponsored by the Division of Fuel Technology of the School of Mineral Industries at Penn State.

**The Porcelain Enamel Institute Forum is to be resumed, following a lapse of four years, at Ohio State University, Columbus, Ohio, November 28-30.**

As personnel and facilities of the porcelain enameling industry have been almost entirely devoted to war production, the 3-day meeting in Columbus is intended to provide a "refresher" course, stressing fundamentals of the technique of enameling. Discussions will be led by experts of the industry, and attendance will not be limited to members of the Porcelain Enamel Institute and their employees. All companies and individuals connected with the porcelain enameling industry are invited to attend. A nominal registration fee will be required.

**The Architects' Society of Ohio, at its recent 12th annual meeting, became the Ohio Chapter of the American Institute of Architects.**

Willis Vogel, Toledo, was elected president of the Ohio body, succeeding E. Milton MacMillin. James R. Edmunds, Jr., Baltimore, A.I.A. president, was guest of honor at the meeting held in Columbus.

Other new officers are: John F. Suppes, Akron, first vice president; Russell Potter, Cincinnati, second vice president; C. Curtiss Inscho, Columbus, third vice president; Ralph C. Kempton, Columbus, secretary; and Richard H. Cutting, Cleveland, treasurer.

*(Continued on page 26)*

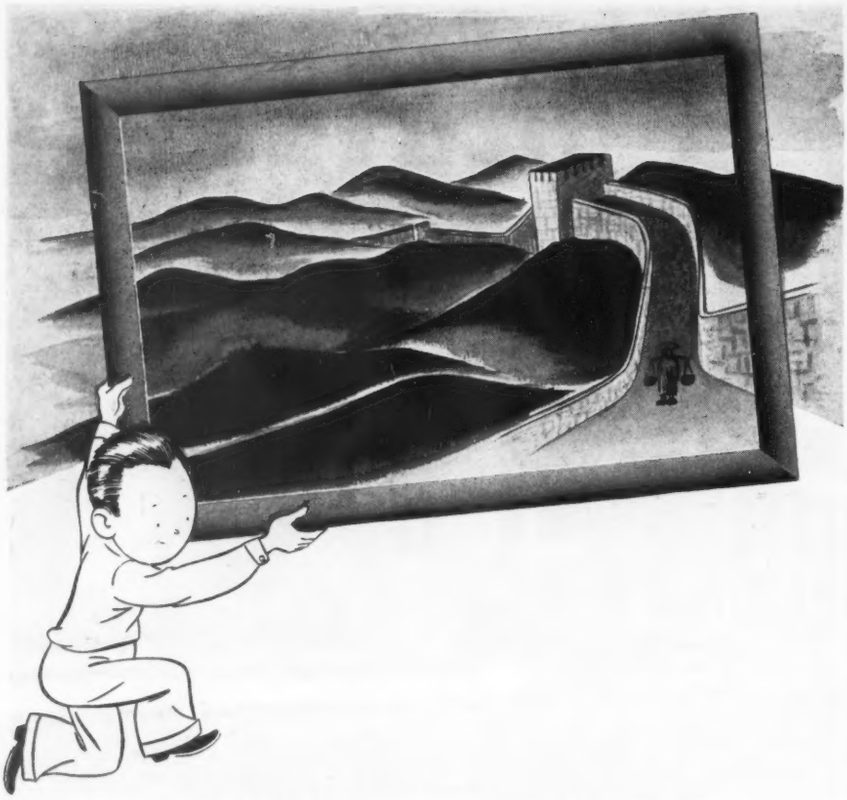
# *Education* is "big business" too—

Today America's public school population is almost 25,000,000 strong. That includes 800,000 teachers . . . busy men and women who are doing one of the biggest, most important jobs in the nation. Why shouldn't they have the benefit of modern communications . . . *a daily necessity* which the business world takes for granted?

Leading school architects and engineers agree: modern schools require fast, dependable means of interior communication. That's why they are looking to "Connecticut" for all that's new in the field of inter-communicating telephone systems. It's the same with progressive school boards. Here are some of the reasons why . . . "Connecticut's" new free-running silent dials are more *noiseless* than ever . . . classroom cradlephones are equipped with either audible or visual signals . . . no soldered connections means that cradlephone parts are easily interchangeable. Want to know more about us, what we make and how we make it? Write for Bulletin 103, today. And remember, "Connecticut" also has a complete line of clocks, fire alarms, and signalling systems. For your free copy of Bulletin 103, address Great American Industries, Inc., Connecticut Telephone & Electric Division, 408 Britannia Street, Meriden, Connecticut.

# *Connecticut*

TELEPHONE GAI SYSTEMS



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# News

*(Continued from page 24)*

**First major exhibition of 1946 at the Museum of Modern Art in New York will be colorful and exotic—a presentation of arts of the South Sea islands directed by René d'Harnoncourt.**

More than a year ago, the collection of works from Australia, Melanesia, Polynesia, and Micronesia was under way. Objects to be shown will include sculpture in stone, bone, and wood, stamped and painted fabrics made of bark cloth and fiber, jewelry made of shell and turtle shell, carved details of ceremonial houses or temples, canoe ornaments, weapons, masks, large idols, and ancestral figures.

Names of remote places from which the exhibition is drawn will include some made familiar through the war years, such as Guadalcanal, Bougainville, New Guinea, Truk, New Britain, the Gilbert and Caroline Islands, and the Marianas.

Those who have not forgotten d'Harnoncourt's impressive display "Indian Art of the United States" early in 1941, will eagerly anticipate the South Sea islands exhibition, to open January 30 and remain on view through May 19. The second floor of the Museum will be entirely rebuilt to accommodate the installation intended to present the emergence of various cultures in their contiguous rather than their chronological relationship.

Work on the exhibition is being directed by d'Harnoncourt, Director of the Museum's Department of Manual Industry, in collaboration with Dr. Ralph Linton, Professor of Anthropology at Columbia University, and Dr. Paul S. Wingert, Instructor in the Department of History of Art at Columbia University.

**Names of 5 architects and 4 builders, who will serve as jurors in the Chicago Tribune's $24,000 Chicagoland Prize Homes competition, have been announced by Boyd Hill, A.I.A. professional adviser.**

Chairman of the jury of awards is Paul Gerhardt, Jr., president of the Chicago Chapter, American Institute of Architects. Co-chairman is Philip B. Maher, Chicago architect and F.A.I.A. Other architect members of the jury are John Merrill, A.I.A.; A. N. Rebori, both of Chicago, and John W. Park, production manager of the *Chicago Tribune*.

Builder members of the jury are Irvin A. Blietz, Wilmette; Arthur E. Fossier, president, Chicago Metropolitan Home Builders' Association; J. E. Merrion, president, National Association of Home Builders; and John R. O'Connor, both of Chicago.

The competition was announced in PROGRESSIVE ARCHITECTURE of October 1945.

# Reconversion Or Rescrambling?

The atomic bomb, so spectacularly dropped on Hiroshima, has caught and held the attention of all mankind. A new source of universal anxiety was born when it burst. Every man will henceforth live with the knowledge that on any hour of any future day he and all his works may be blotted out without warning. What to do about it is the problem being pondered by statesmen and their kibitzers the world over. Chances are they will find the answer, because the weapon is unselective; it menaces the strong and rich equally with the weak and poor.

Much less general attention appears to be given to another devastating force—an economic bomb—loosed upon us all the day "peace" was declared. Like its destructive physical counterpart, this economic bomb operates by fission and disintegration—but instead of disrupting the organization of protons and neutrons, its points of application are men and groups of men. Victory having acted as a detonator, the social units of which the populations of the allied nations are made up have immediately begun to fly apart.

Unlike the atomic bomb, which spends its force in seconds, the economic bomb will explode over a substantial period of time—probably several years. The total of misery it will produce may eventually surpass what was inflicted on the late inhabitants of the two now defunct Japanese cities. Yet because its results are not equally felt by all, there is much less likelihood that an effective concerted effort will be made to ward them off.

Now that the shooting war is ended, there arise in our country the outcries of many separate interests calling for the removal of controls and the satisfaction of particular group desires. Soldiers and their families are demanding accelerated demobilization. Taxpayers are crying out for reductions. Wage earners are striking for higher pay rates. Businessmen want higher prices and landlords higher rents. Any over-all plans that may have been made for orderly reconversion are in danger of being swept aside in the great stampede. At the moment the prospect is far from encouraging. Everyone, it seems, is pushing for personal advantage, heedless that he is contributing to a general inflation that will cost him more than he can gain.

It is perhaps the American way to scramble back to comparative stability rather than to reach the goal in calm good order. Yet it is also the American way for every responsible citizen to act to keep the herd from tromping itself to death.

The architect's part is to help get quickly under way the program of construction which is depended upon to furnish a large volume of employment in the coming years. In spite of present material shortages, high prices, and the reluctance of contractors to bid, ways must be found to begin building again by next spring. There is a twofold need —to provide the long-awaited new houses, schools, business buildings, churches, etc., and to renew the life-giving flow of money through the economic system before it falls again into hopeless depression. Just as scientists are expected to harness atomic power beneficently, so plan-minded men can and must work together to guide the forces of productive economy into constructive channels.

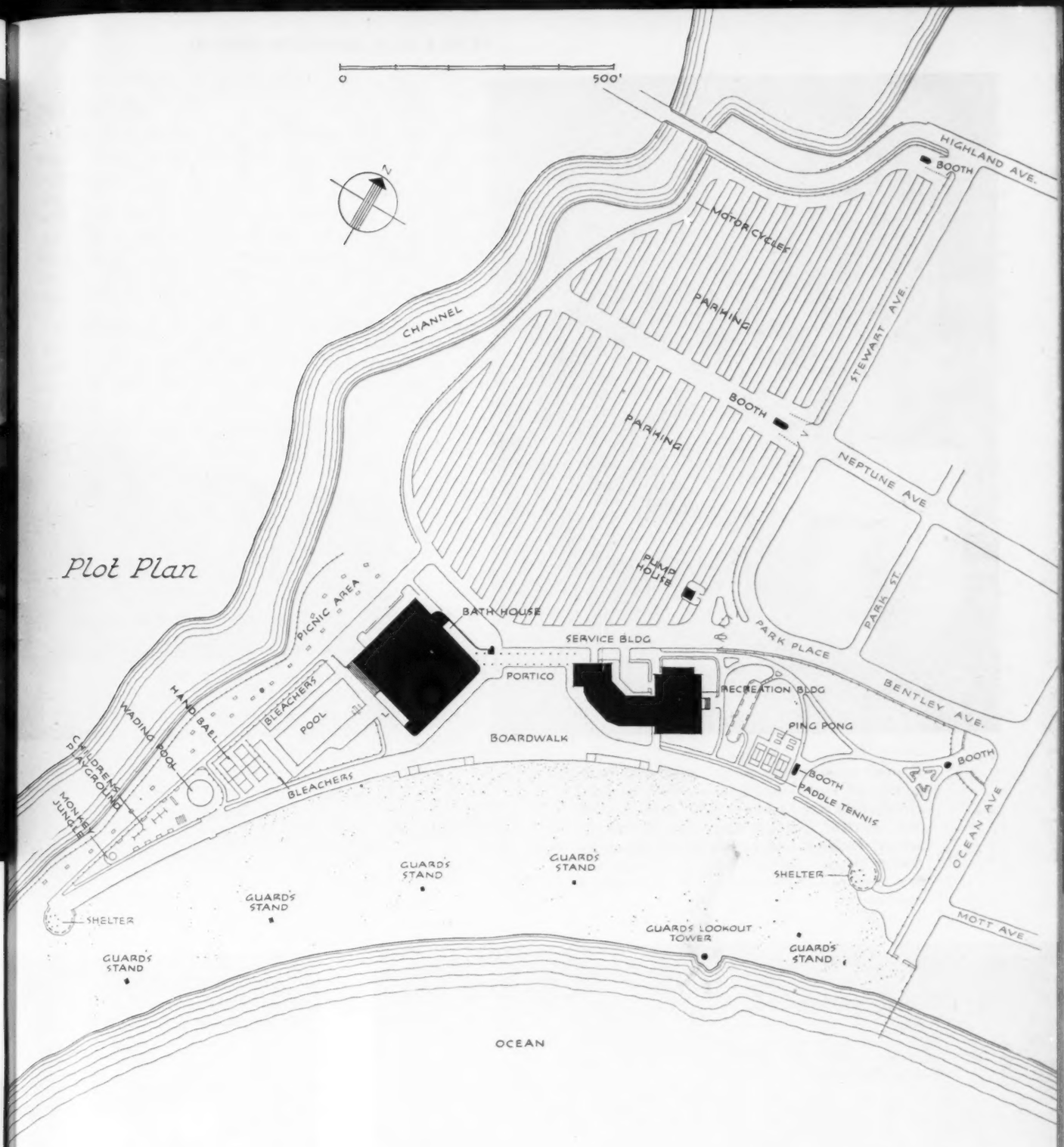
Kenneth Reid

*P. A. Dearborn*

# Ocean Beach Park, New London, Connecticut

**PAYNE & KEEFE, ARCHITECTS-ENGINEERS**
**W. EARLE ANDREWS, CONSULTANT**

*Public parks and playgrounds form one of the chief categories suggested by those who favor "living war memorials." For progressive cities that find it desirable to honor their war dead by means of improved facilities for the living, the coordinated playground shown here should hold a special interest. Built before Pearl Harbor, the New London project is proof of the benefits that derive from integrated, over-all planning. While it may not offer a pattern for any other community to follow, it sets high standards to aim at or excel. All the more remarkable when it is realized that a city of 30,000 affords it.*



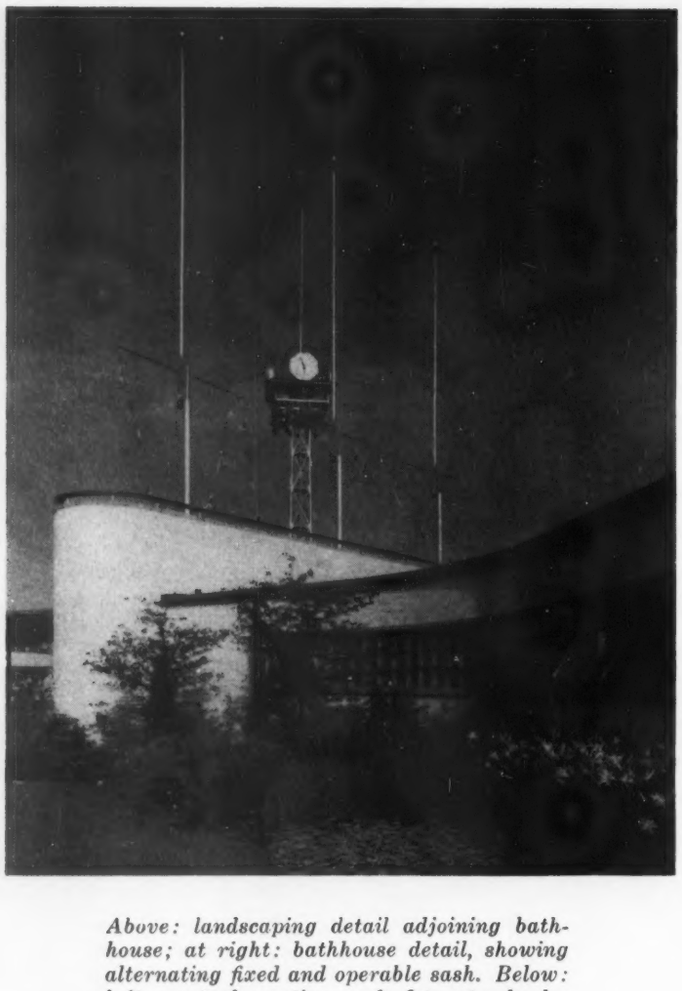

**BACKGROUND**

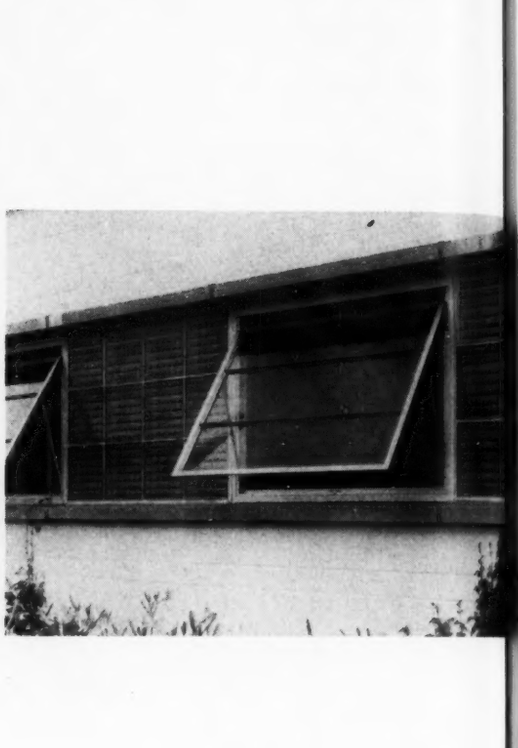
In 1938, the site consisted of a narrow strip of public beach and upland (3.9 acres) surrounded by an uncontrolled mélange of privately owned beach cottages, rooming houses, cheap concessions, and ballyhoo joints. In the Fall of that year, New England's worst hurricane ripped across the area and left little in its wake other than wrecked buildings, torn up walks, sandpiles, and debris.

Through the good offices of the then Mayor, Alton T. Miner, planning and architecture were happily called to the rescue. W. Earle Andrews and Kenneth Morgan of New York City were commissioned to prepare an over-all plan for a modern seaside development to be operated on the highest standards for the enjoyment of all the people. This plan, encompassing 50 acres, was accepted as a directive for the detailed work that Payne & Keefe carried out.

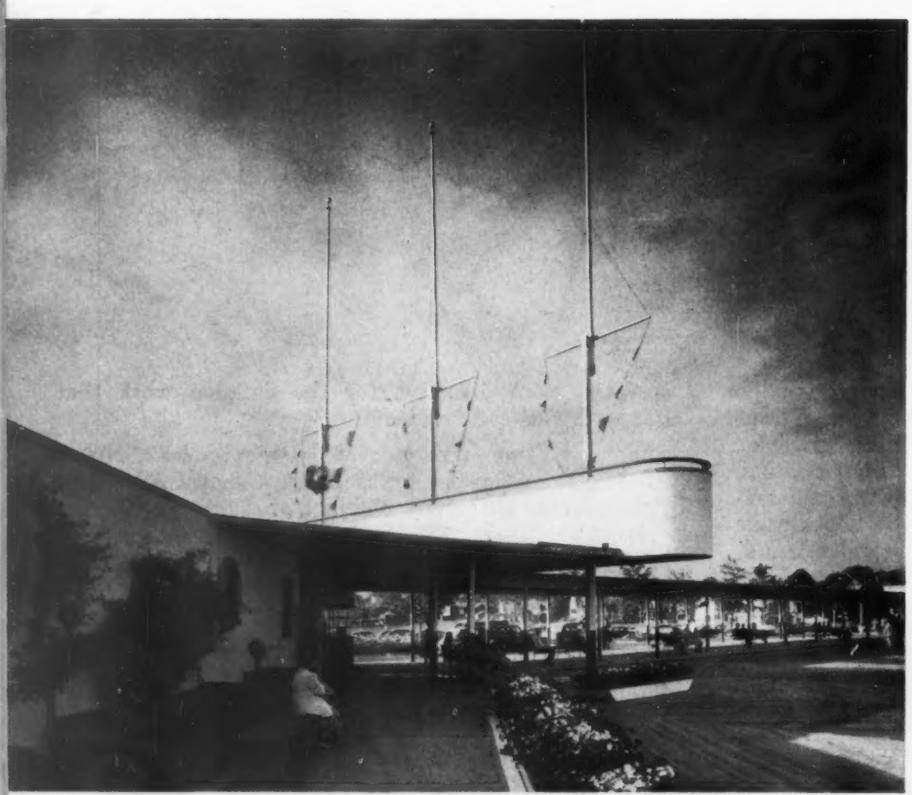
Financing came from proceeds of a special $2,500,000 bond issue authorized by the State General Assembly. The required space was obtained through purchase of properties of some 175 owners. Inasmuch as the bond issue exceeded the debt limit of the city, the project had to produce revenue. Original sources—general admissions, and fees for use of parking space, swimming pool and bathhouse—were later materially increased through a restaurant, food bars, other concessions, and the new Recreation Building.

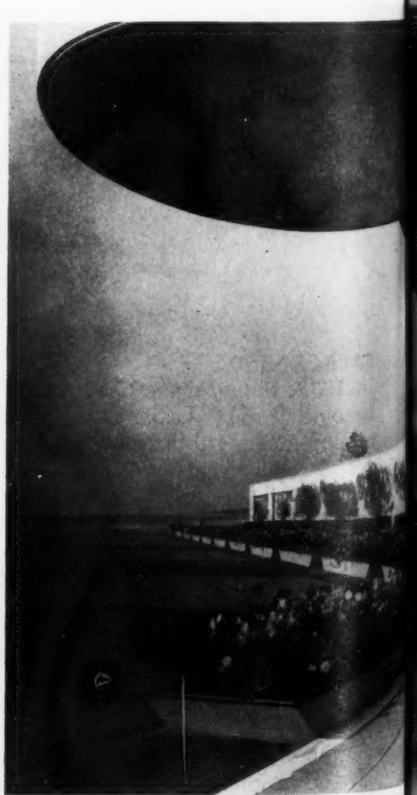
Payne & Keefe were retained in September, 1939; the first contract was awarded the following month, and the park was formally opened in June, 1940!





*Above: landscaping detail adjoining bathhouse; at right: bathhouse detail, showing alternating fixed and operable sash. Below: left, central portico and flag standards; center, looking toward bathhouse from entrance plaza; right, detail of portico and bus- and car-loading dock; the roof slab is concrete.*





## THE SOLUTION

A basic plan decision was to increase the depth of the beach from 75 to 300 feet, and the boardwalk and service buildings were located on this basis, following the curve of the coast line. The boardwalk, 20 feet wide and 2,000 feet long, is equipped with benches, drinking fountains, and shelters at either end. In the center is a sheltered portico, flanked on the one hand by the bathhouse, on the other, by the Service and Recreation Buildings.

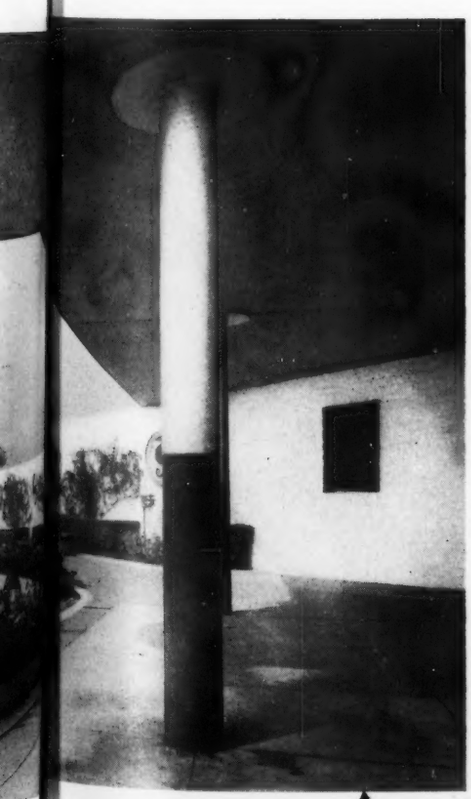
The structural system for the buildings was adopted with an eye to both permanence and ease of maintenance; floors and roof slabs are of reinforced concrete; exterior walls are of cinder block, painted; a minimum of wood is used, and glazed tile was specified on surfaces where sanitary requirements made it advisable.

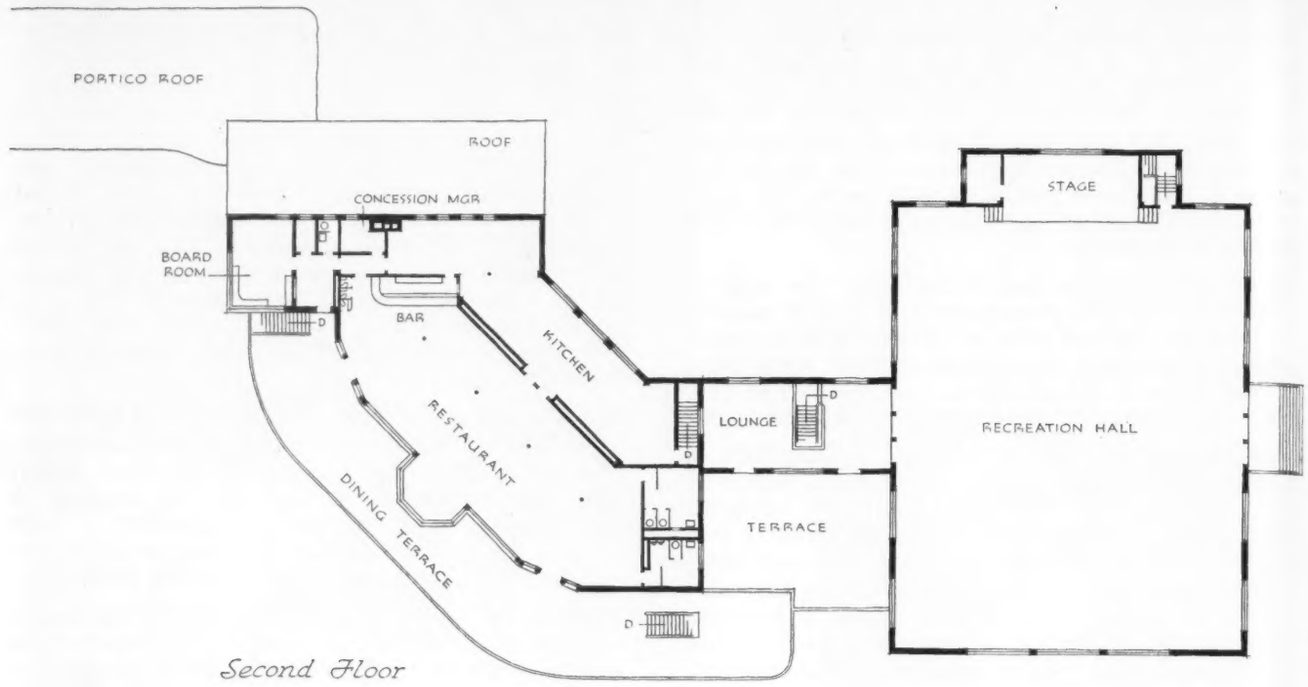
The over-all plans include a 15-acre parking field to accommodate 3,000 cars; the boardwalk; a bathhouse with space for 3,600 patrons; a completely equipped, Olympic-size swimming pool; a Service Building that includes park offices, food bar, restaurant, gift shop, police quarters, etc.; a Recreation Building for dancing, roller skating, other athletic events, and concessions; handball courts, shuffleboard, deck tennis, archery, and other popular games; a special children's playground, including a wading pool; a picnic area with tables and seats; a steel theme tower with clocks and public-address system; lifeguard stands, and miscellaneous other small units such as ticket booths, counting devices, bay markers, grandstands, lockers, benches, and shelters.

Increase of the bathing beach from 75 to 300 feet required extensive soundings to locate the type of white sand that had made the original small beach popular; this was found about 600 feet off shore, and after the boardwalk was completed, the sand was brought to shore hydraulically. The site of the parking field was originally a salt marsh, with a main stream and several small inlets running through it. Approximately one-quarter of a million cubic yards of sand and gravel were pumped in from off shore to bring this area to grade. Following a period for settlement, the entire surface was paved with bluestone, rolled, with a two-inch topping of asphalt. This entire area is floodlighted at night.

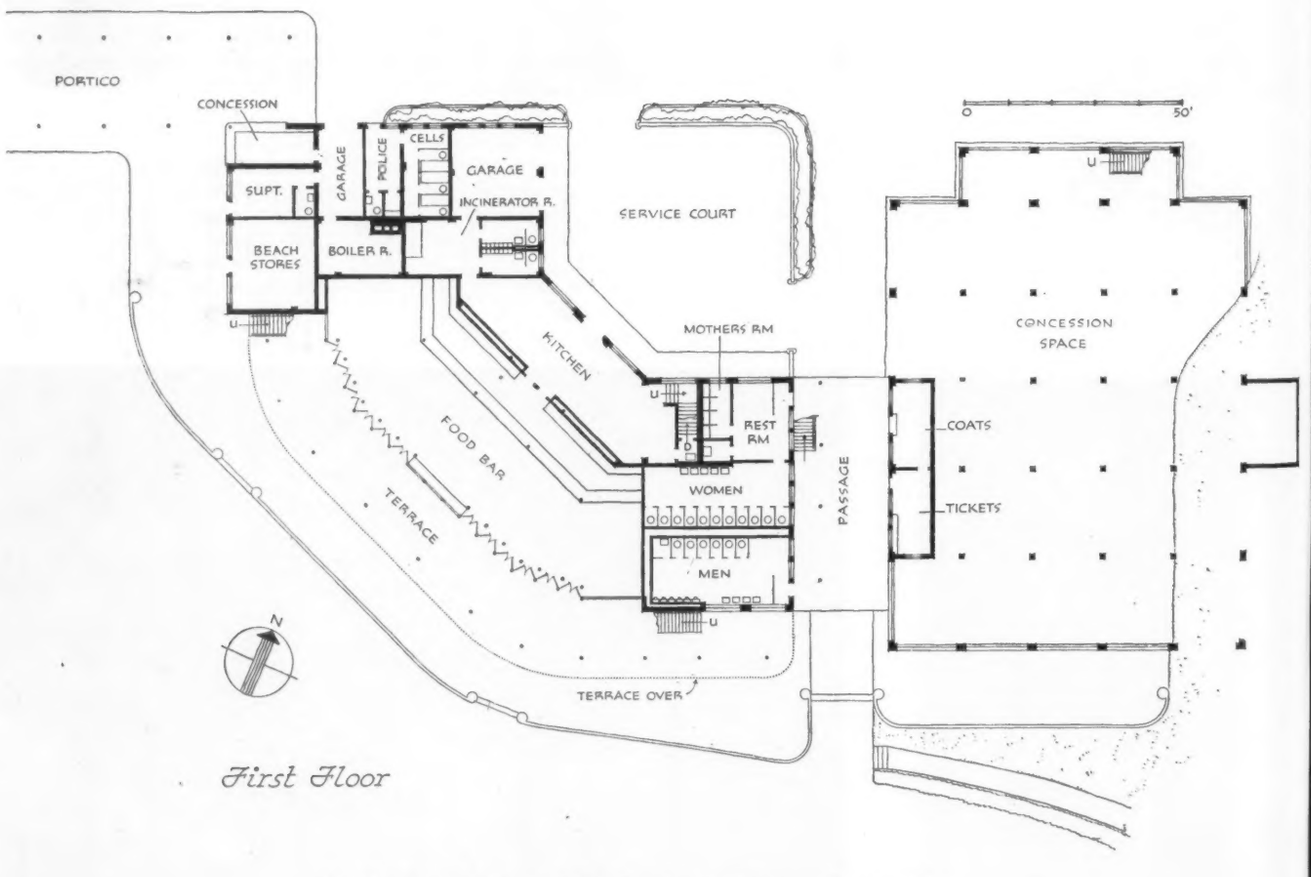
The boardwalk, paralleling the shore line, is built with its deck about 10 feet above the high water line; construction is of treated pine and fir on wood piling; clear, edge-grained fir is used for the decking. A continuous marine-type railing is provided on both sides of the walk, and ramps and steps occur at convenient points for access to and from the beach.

The time available for the construction of the park—less than nine months from the time the designing was started to the time of opening—made it necessary to break up the work into many contracts. The first, calling for the demolition and removal of all old buildings and utilities, was followed in rapid succession by 46 other separate contracts; construction of the boardwalk was started before demolition of existing cottages was completed.






Second Floor

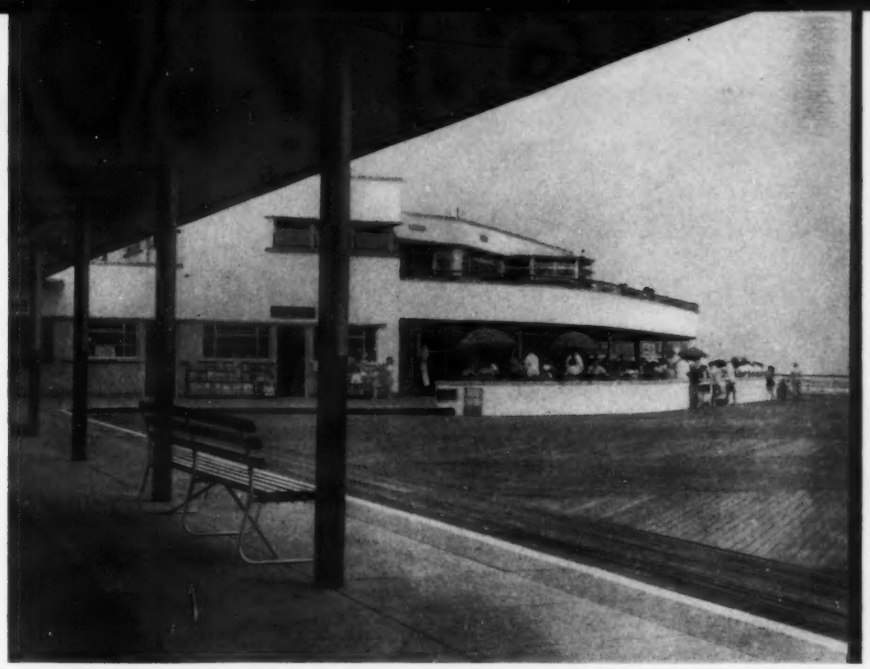



First Floor

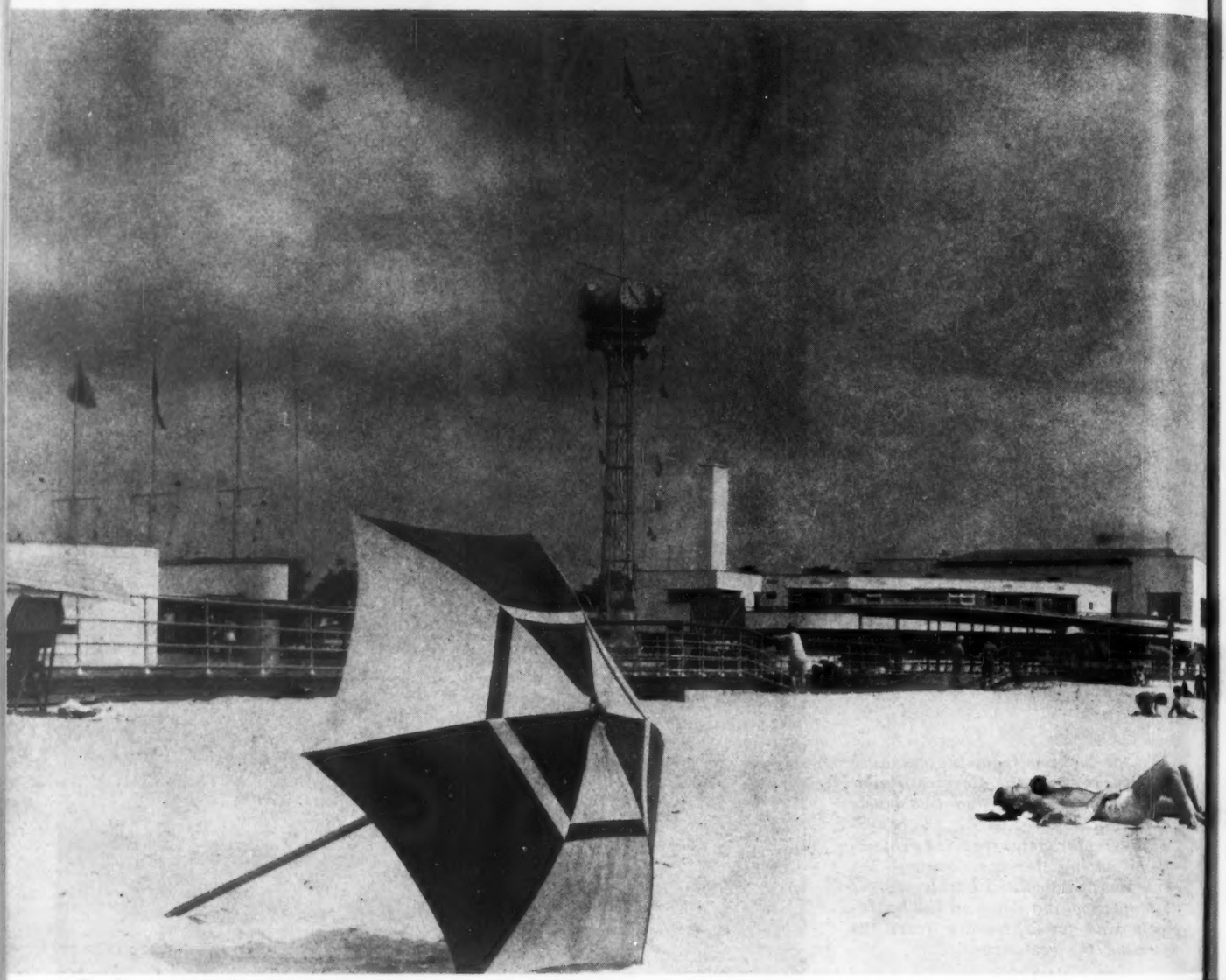
*On the ground floor of the Service Building, a food and beer bar are organized for quick service from the kitchen.*

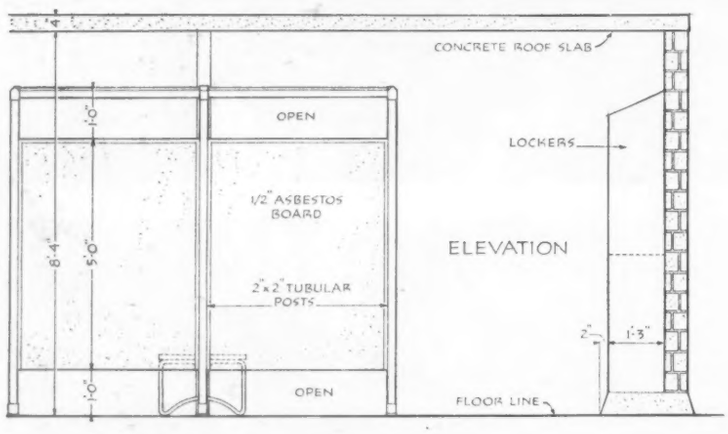
*Outside, bordering the boardwalk where it widens to form the central plaza, is a dining terrace; upstairs is a restaurant and cocktail bar, also with outdoor dining deck.*

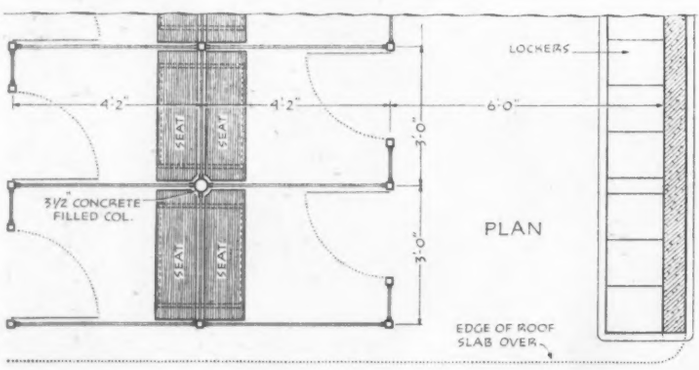
*The Recreation Building is used chiefly for dancing, roller skating, and special events. In the basement, a concessionnaire operates games of skill and amusement. The most recent unit to be added to the Park development, it has proved to be one of the best revenue-producers.*



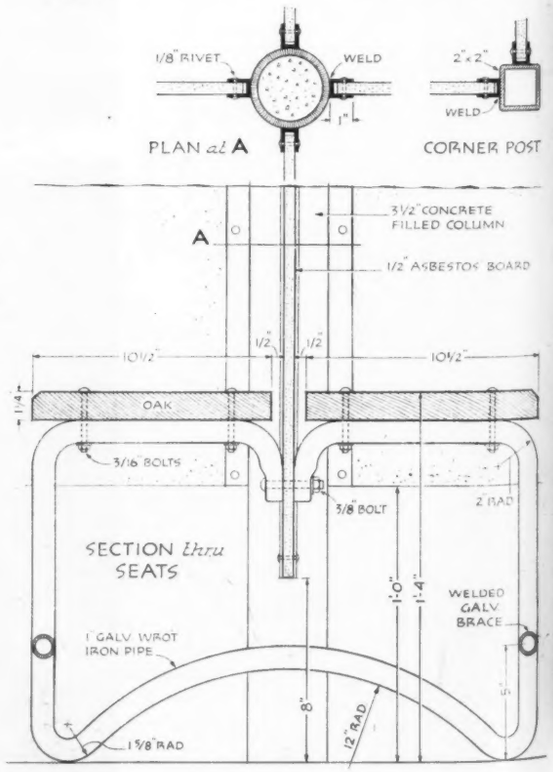
*At top: looking from the entrance portico toward the Service Building. A beach shop and two levels of dining terraces border the boardwalk. Center view: from the ground-floor eating terrace, toward the entrance portico and bathhouse. At bottom: looking down on the boardwalk and lower terrace from the deck off the restaurant.*





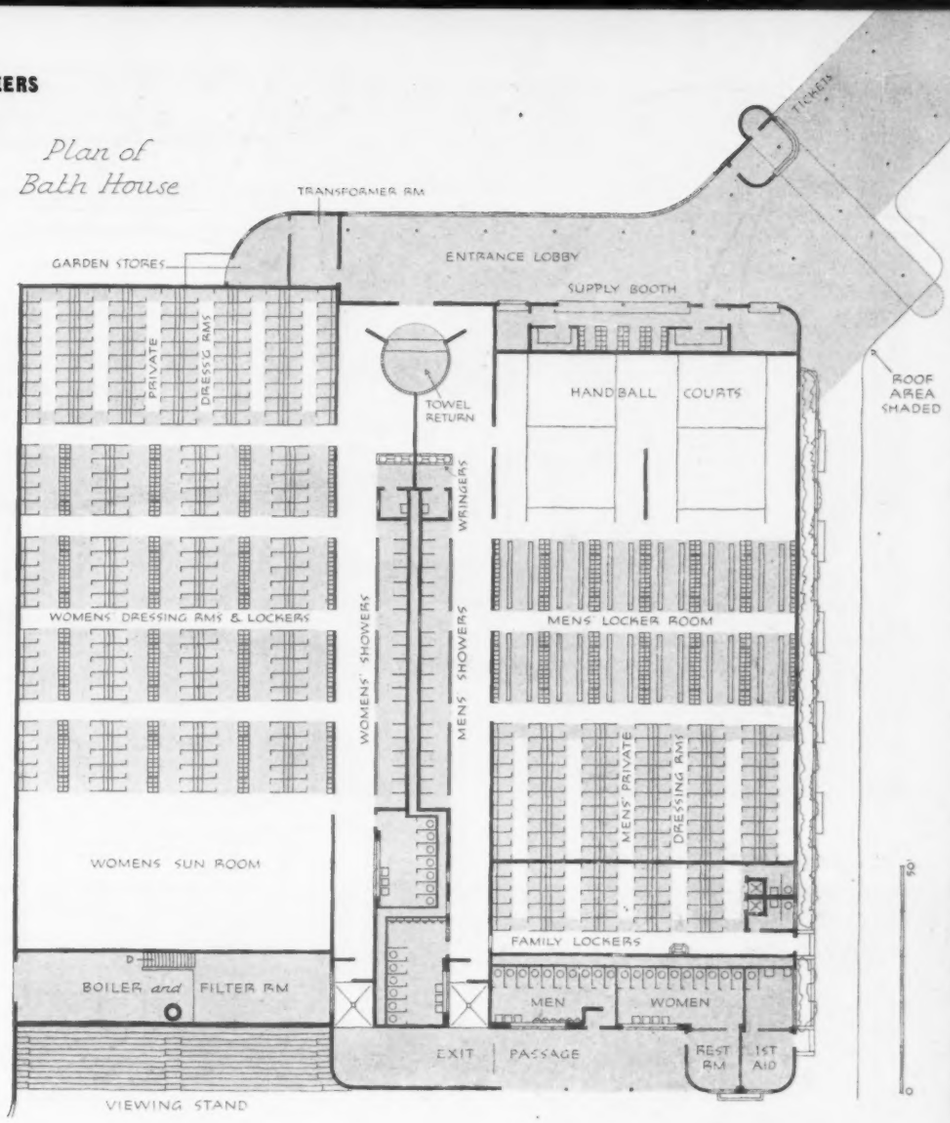




## Typical Locker Room Details

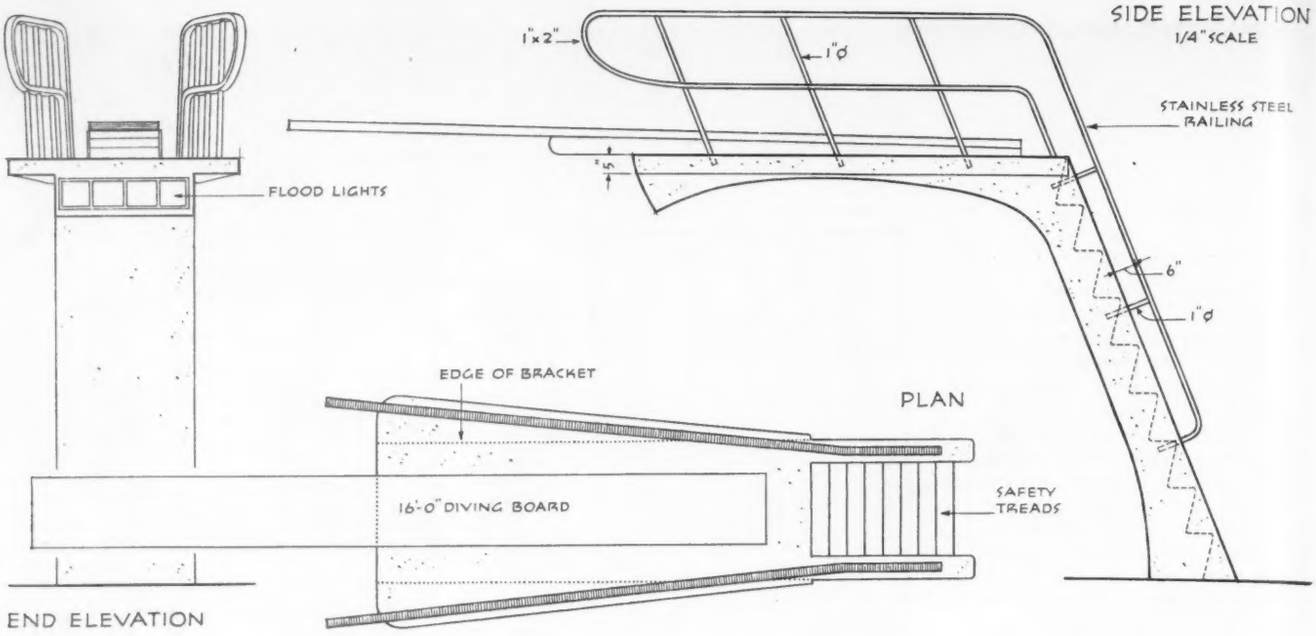


**PAYNE & KEEFE, ARCHITECTS-ENGINEERS**

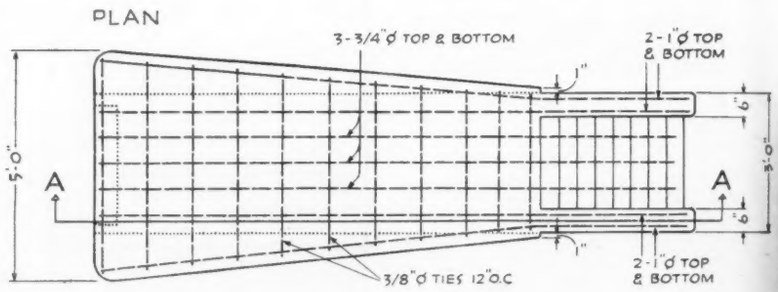
*Plan of Bath House*

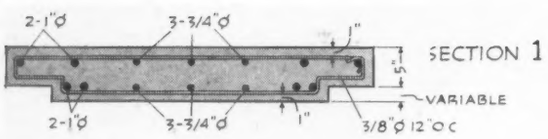


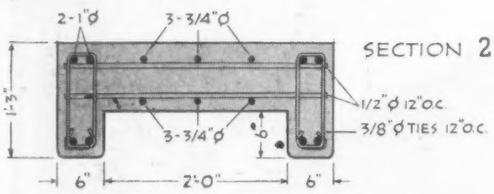

*The bathhouse, with space for about 3,600 patrons, includes locker rooms, private dressing rooms, and—a thoughtful provision—a group of rooms assigned to family use. The grayed portions of the plan indicate areas that are roofed over. Within the building enclosure are a sun room for women and handball courts for men. The showers, aligned along a central plumbing stack, are screened from the unroofed passageways by partitions with glass-block insets. Details of locker benches are shown on the facing page. Other units in this building are the boiler and filter room for the pool, public toilets, and the beach first-aid room.*

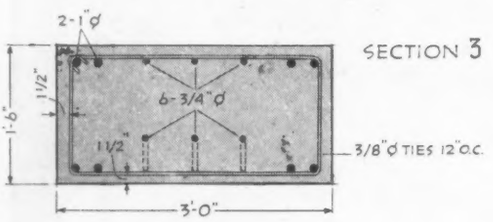


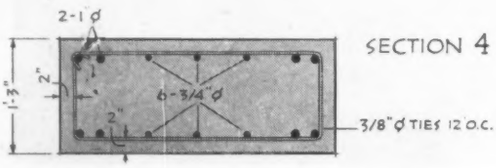

# *Design and Structural Details of Diving Tower*

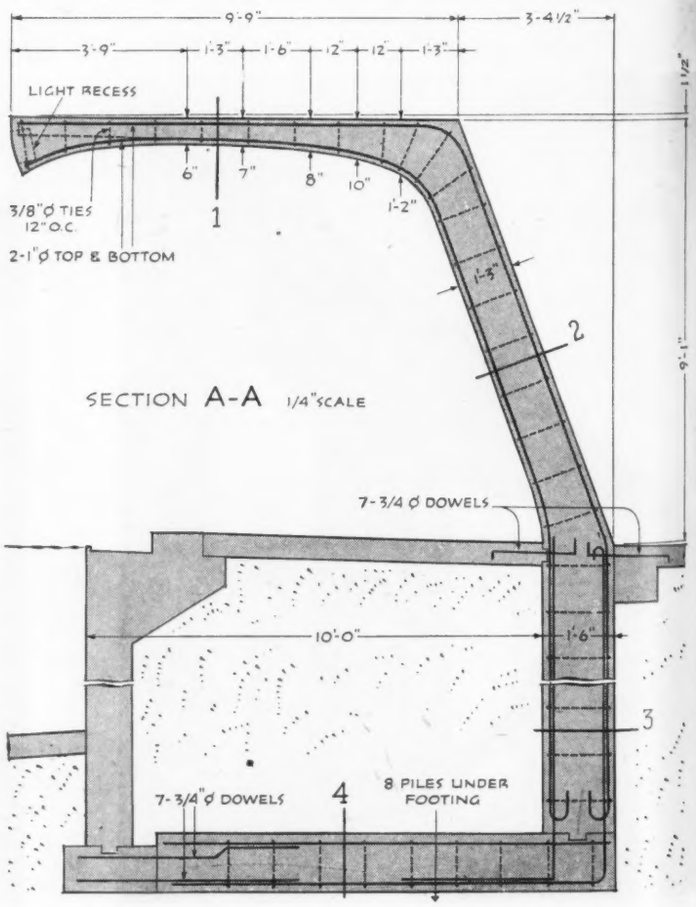


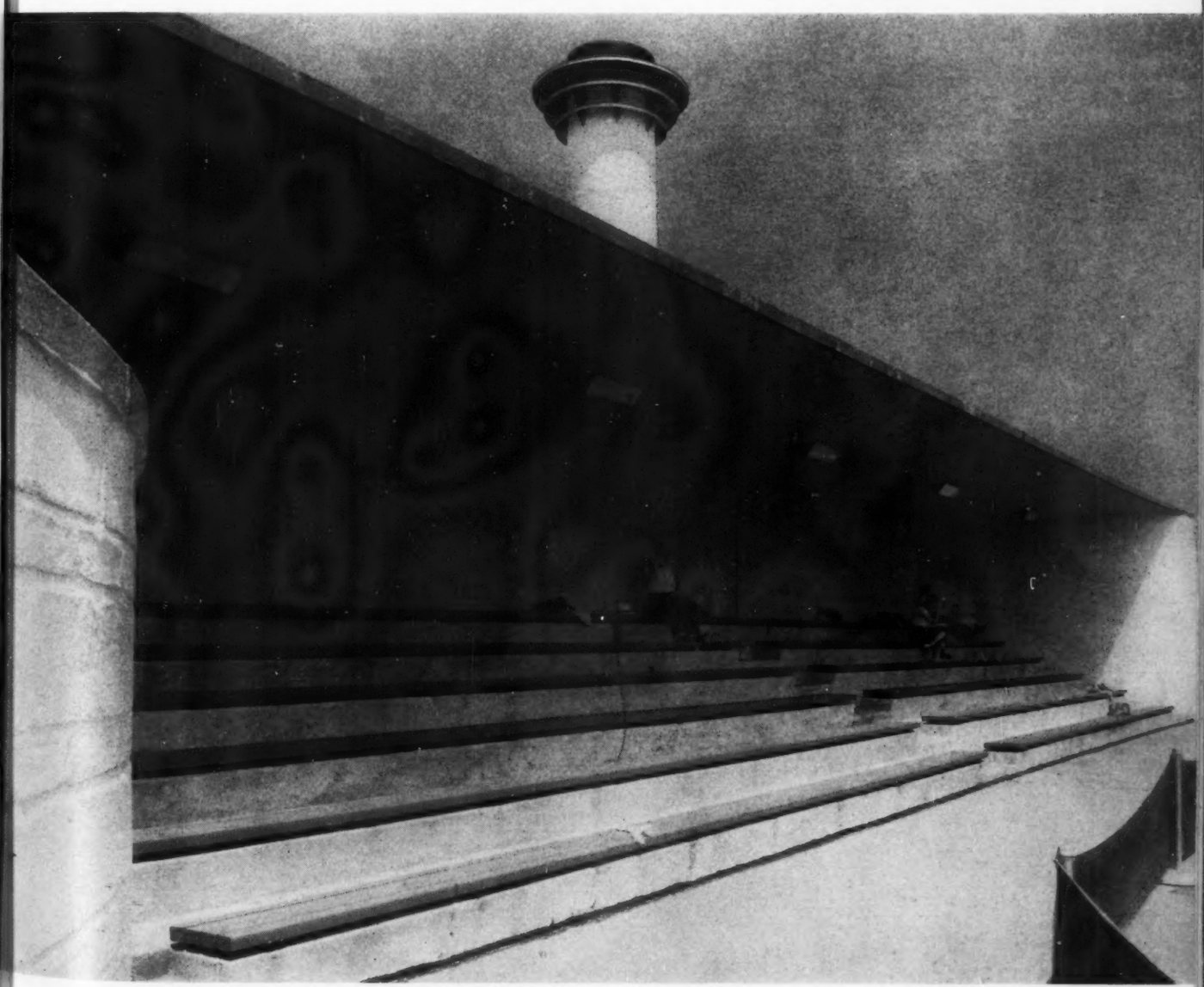



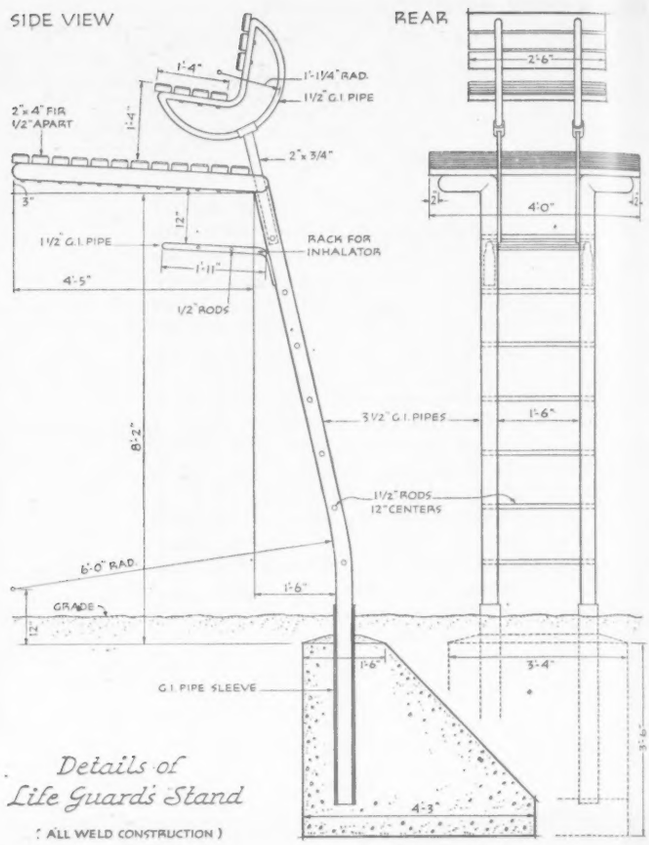



*Pool diving board. The architects designed the cantilever properly (see details, facing page); but an accident made it necessary to include the supporting column. The pool was used for exhibition purposes before the concrete had set, and this, unfortunately, damaged the structure. The swimming pool, of Olympic size, is located adjacent to the bathhouse, with one end of the bathhouse building forming a sheltered grandstand (photo below). Bleachers at the sides of the pool provide seating for several thousand spectators. The pool is connected with the salt water and has full equipment for heating and chlorination.*

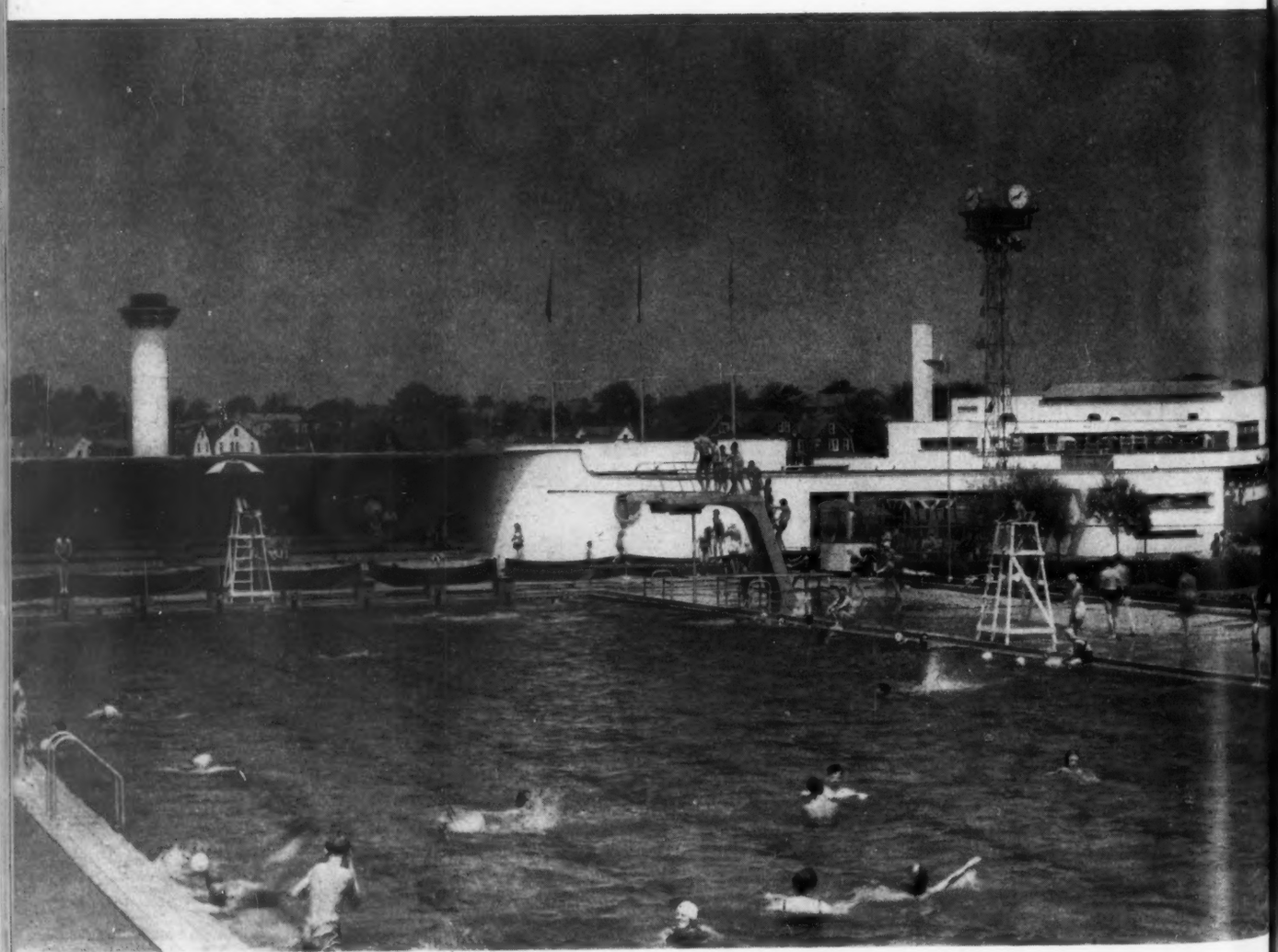


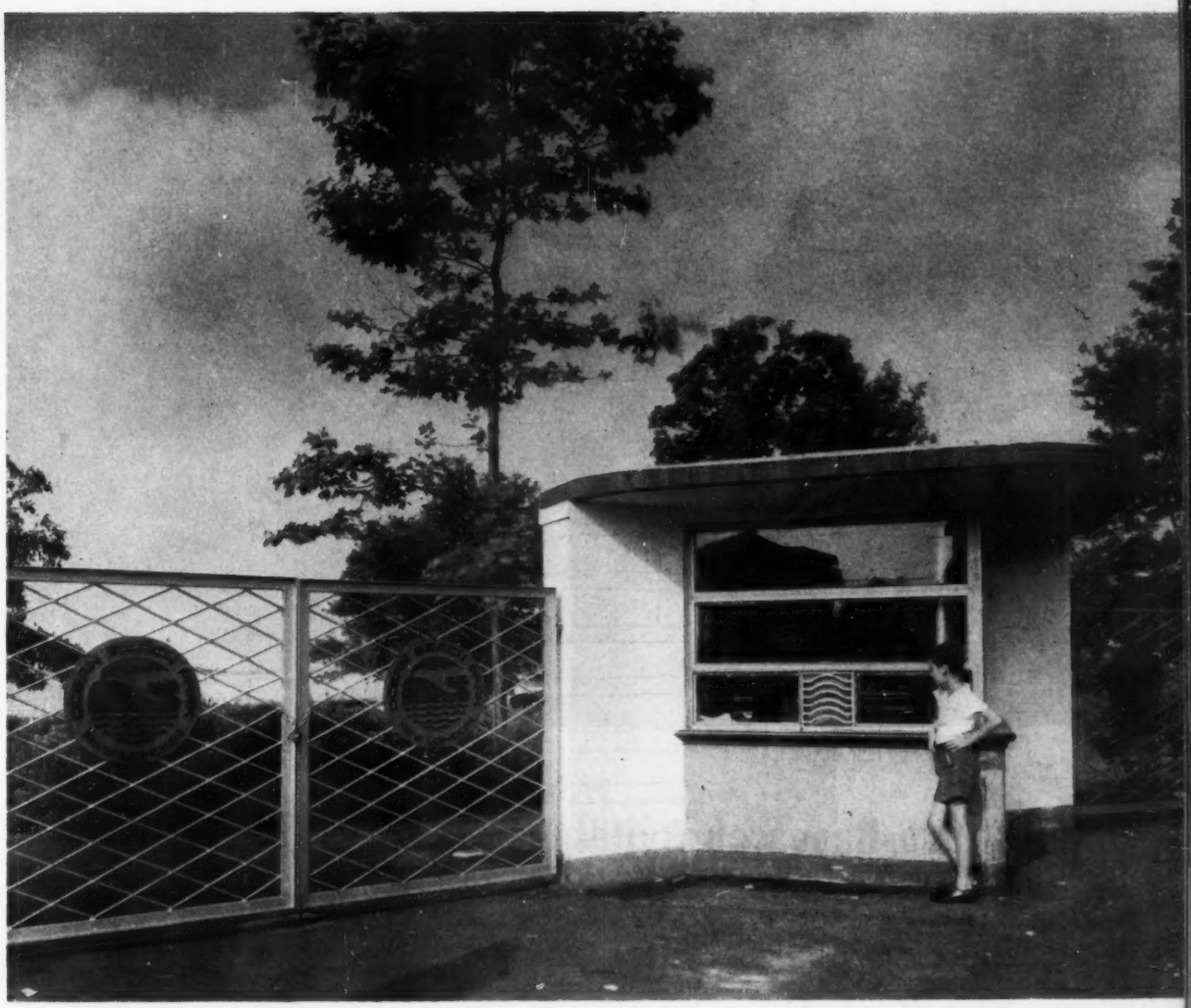
*One of the lifeguard stands on the beach. Below: General view of the swimming pool, with grandstand at left, rear.*



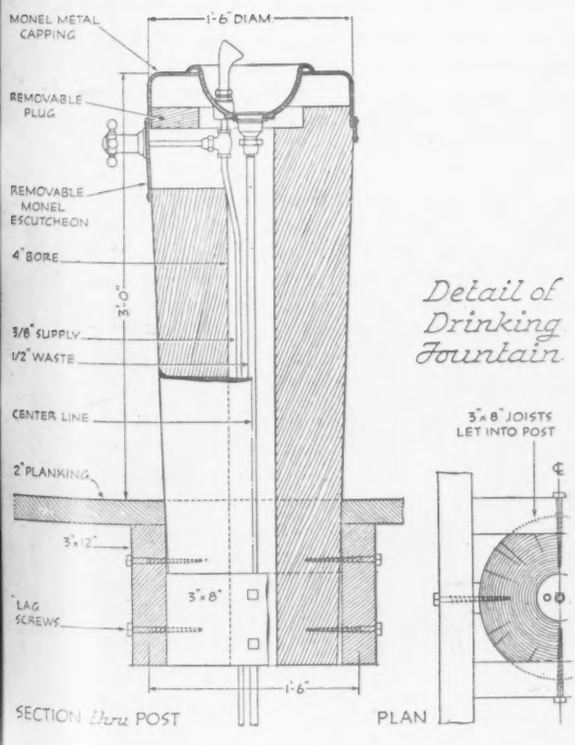

*Details of Life Guards Stand*

( ALL WELD CONSTRUCTION )

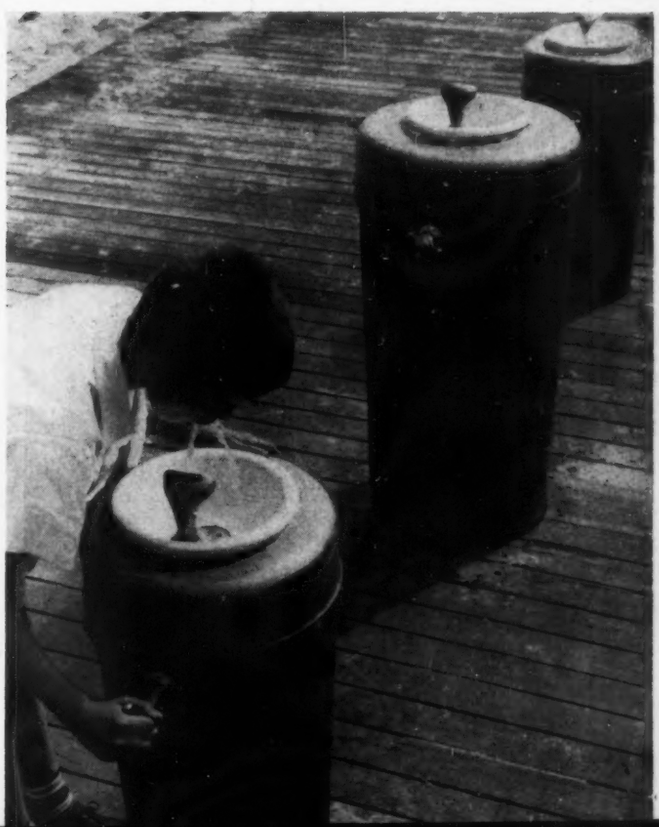




*The coordinated over-all planning of Ocean Beach Park includes harmonious design of all elements—benches, drinking fountains, ticket booths, planting tubs, shelters, etc.*




*Detail of Drinking Fountain*

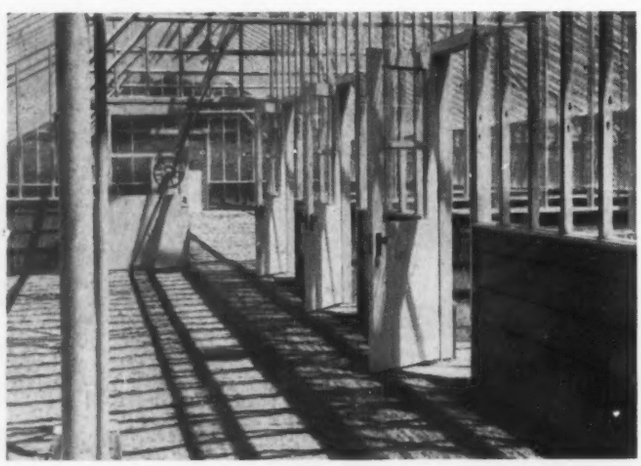


*Frank H. Ubhaus*

# Horticulture Research Buildings, U.C.L.A., Los Angeles, Calif.

**PAUL R. HUNTER AND WALTER REICHARDT, ASSOCIATED ARCHITECTS**

*Architecture is always the physical mold in which human activities are cast, and in an age of increasing specialization, new architectural forms naturally appear to house and expedite the new, intensive types of work. To the extent that the projects are skilfully designed for the purpose, the new ventures are likely to prosper. These extraordinarily forthright units for floriculture and plant-pathology research at the University of California (Los Angeles) indicate that the problem was clearly stated, that the architects found unaffected means for solving it, and that the future of horticulture—not to mention the progress of architecture—is thus much enhanced.*



The Problem: To provide two units of a horticultural research group for the University of California (Los Angeles), ultimate plans for which envision another glass-house on each of these original units, several additional, similar head-house-glass-house structures, lath houses, and a classroom building. Since the site is just across an avenue from a development of small homes, a design factor was to make the group more residential than institutional in scale and character.

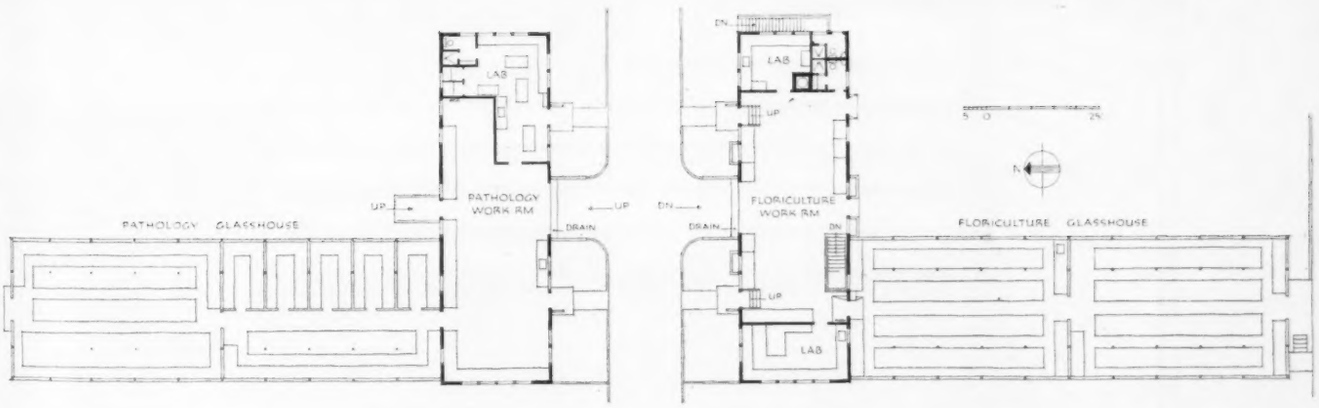
The Solution: Two similar head houses with glass-house wings, symmetrically arranged at either side of the entrance drive. Everything was purposely kept simple and plain as a foil for the rich planting which is part of the eventual plan.

The Floriculture unit, devoted to propagation of the principal flower crops of the area, contains a center workroom which is used for mixing soils, potting plants, and for student instruction. Laboratories at either end serve also as offices. In the Pathology unit, chief plant diseases of the region are studied. The small chambers furnish mechanical isolation for separating out diseases.

Both head houses have concrete slab floors; a full basement under the Floriculture unit contains the transformer vault, a boiler room, and storage space. First floors are framed with 4″ x 4″ posts laid out in a 4-foot modular scheme, with 2″ x 4″ studs placed between them for added stiffness in areas where no interior finish is used. The framework is covered with building paper and redwood siding; the roofs are composition.

Welded pipe framing is used for glass-house construction.

UNIVERSITY OF
CALIFORNIA
ORNAMENTAL
HORTICULTURE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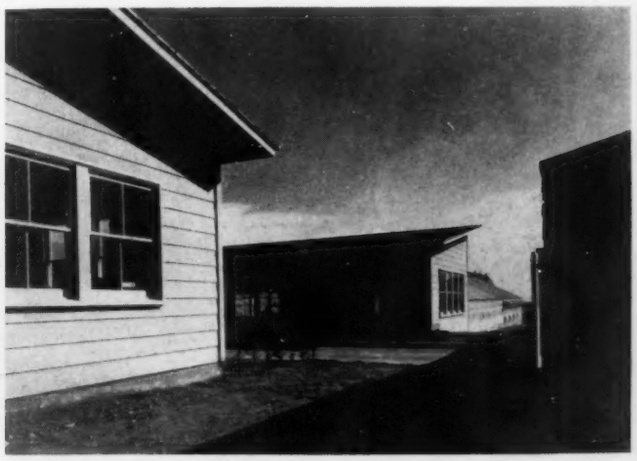


*Facing page: Looking from larger room toward sales room; corrugated glass partition at left; cantilevered yarn-display case at right.*

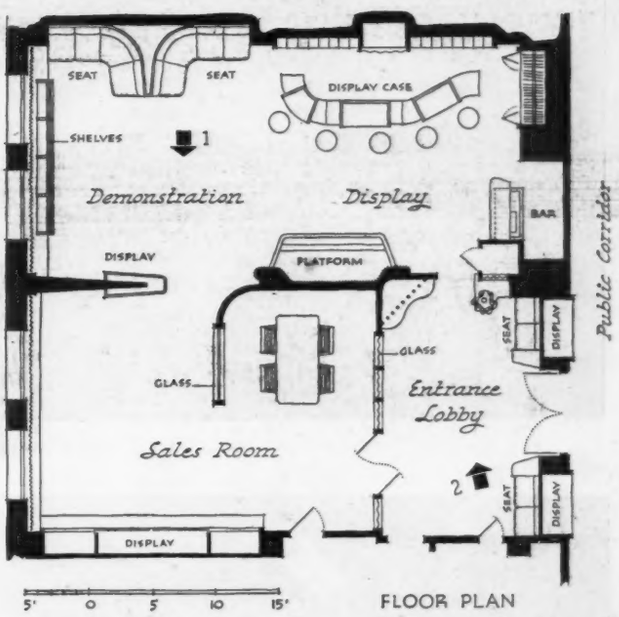
*Right: Entrance hall, furnished with two built-in settees with end tables. The linoleum floor is navy blue; walls, French gray; ceiling, Delft blue.*

2

P. A. Dearborn

# Spinnerin Yarn Co. Show Rooms, New York City

**V. PALADINI, DESIGNER**




FLOOR PLAN

*Environments created for product wholesaling must usually be judged quite apart from basic structural integration; for, as a rule, these are simply interiors developed within a standard and often unsympathetic existing building. Design skill is evidenced rather by plan ingenuity that makes good use of predetermined space and by display techniques schemed around a particular product—yarn, in this case.*

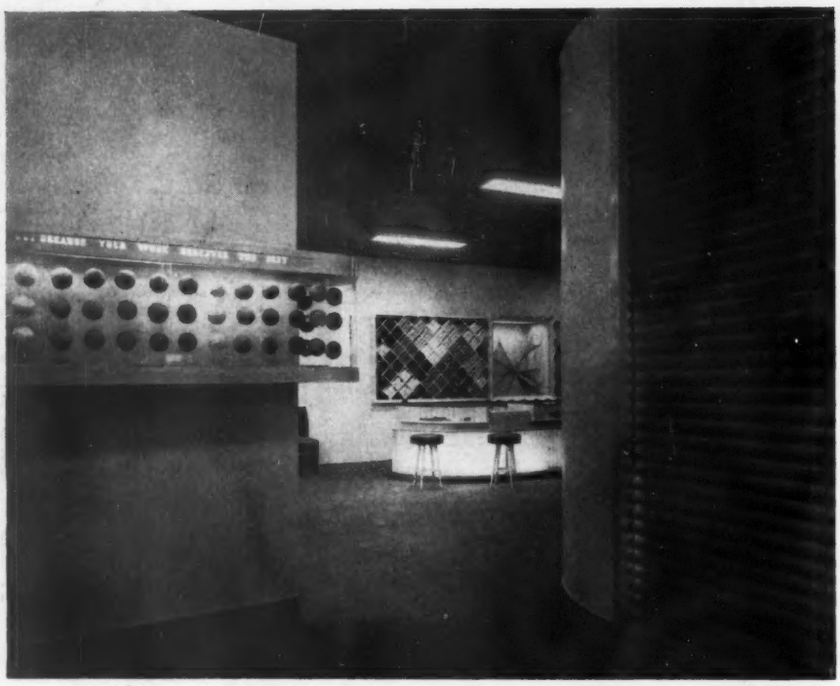
*Problem:* In this addition to a yarn company's wholesale show rooms, the need was for a display space where yarn sales could be assisted by showing buyers effective new ways to display their merchandise and where they could get ideas for developing up-to-date knitting-instruction centers in their stores throughout the country.

*Solution:* The designer subdivided his space into functional areas, yet in appearance and treatment, these are but interrelated components of a visual whole. The only closing door in the plan occurs between the entrance hall and the sales room.

The sales room is partially subdivided by a pickled oak partition screen glazed with blue, frosted corrugated glass, over which is set a sheet of plate glass, air brushed with a decorative map of the world. In the alcove so formed are a table and chairs for business discussions.

The larger display and knitting-demonstration room is entered either from the entrance hall or from the sales room. In the space nearest the entrance hall is a counter sales and display unit, built with a back-lighted, frosted, corrugated glass front. Behind this counter is a wall case made up of central, lighted display case flanked by decorative yarn cases made up of diagonal cells. Against the wall opposite this counter is a stage-lighted platform display of finished products made of Spinnerin yarn. The window end of the room, equipped with a pair of L-shaped settees is used for knitting demonstrations. On the end wall nearest the entrance hall is a cedar-lined storage closet and small refreshment bar.

3



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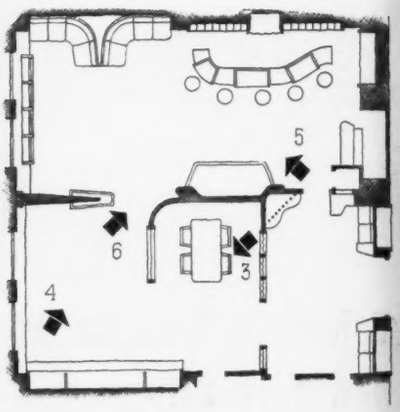


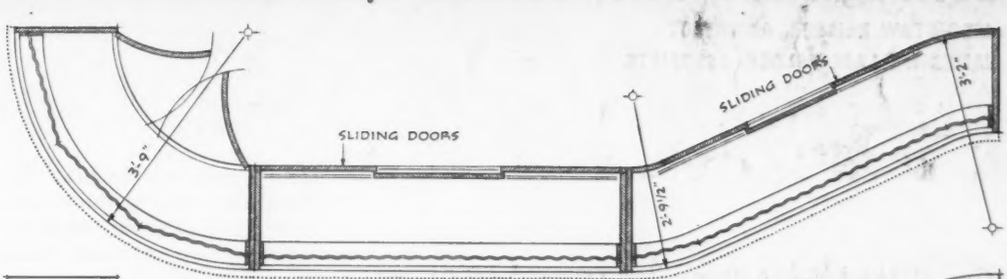

*Top: Business table in foreground; lighted display case and louvered storage drawers in wall at rear.*

*Center: View of knitting counter from sales room.*

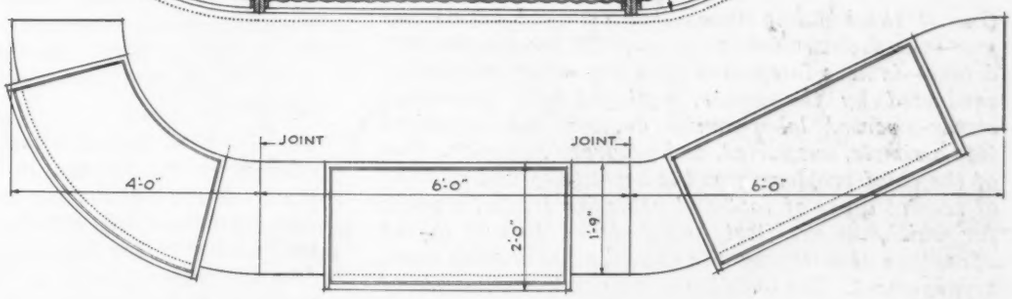
*Bottom: Display platform in left foreground; settees for instruction, at rear. All display rooms have cedar rose all-over carpeting, walls of dusty rose, and ceilings painted a color called "crushed berry."*

5

PLAN UNDER COUNTER

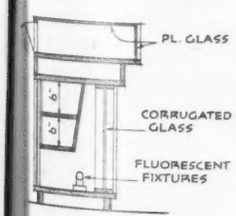



PLAN ABOVE COUNTER

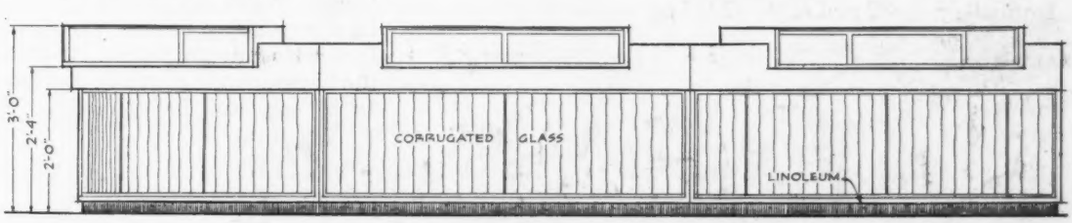



*Details of Display Counter*

SECTION *at* CENTER




FRONT ELEVATION



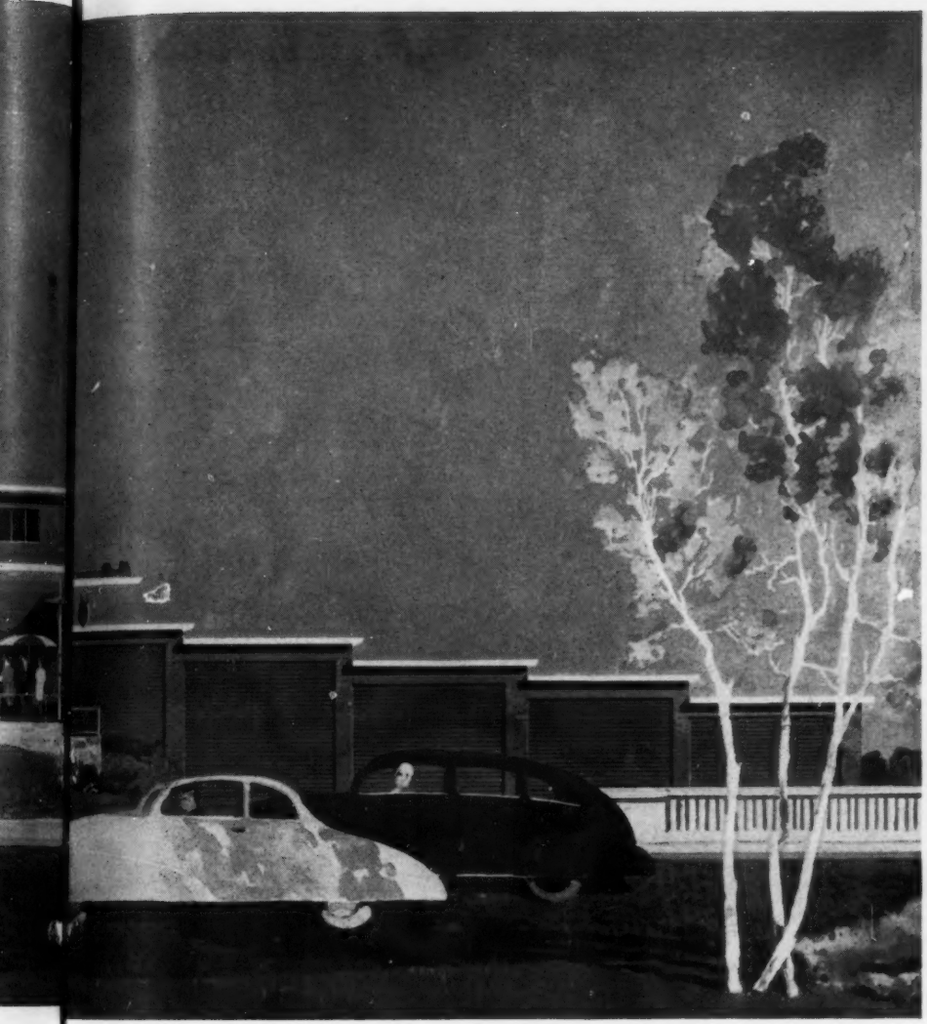
# Bottling Plant, Etc., Baltimore, Maryland

**JEDD STOW REISNER, ARCHITECT**
**JAMES WALLACE FOLGER, ASSOCIATE**

*One of the building types that emerged before the war—the decentralized bottling plant for popular soft drinks—is here integrated with two other enterprises conducted by the owner, equipped with numerous owner-invented labor-saving devices and organized into a simple, unaffected, and progressive design. One of the chief problems was the separating and relating of several types of foot and vehicular traffic, a poser for which the architect found his solution in taking advantage of a sloping site as well as in organic space arrangement. The building is an excellent example of the display-case treatment of the processing problem whereby the major part of the process itself is dramatically framed and highlighted for public inspection.*

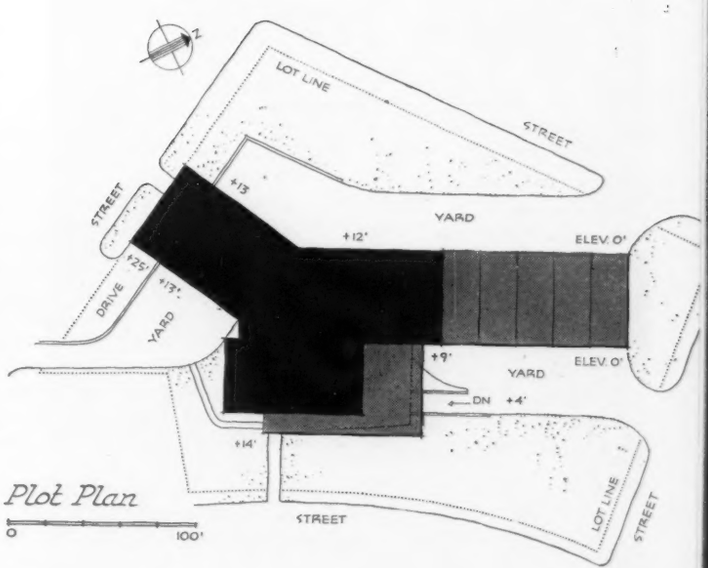
*The Problem:* To plan on a site that slopes rapidly from one side to the other a single structure to house and facilitate the owner's three enterprises: (1) a mixing, bottling, and truck delivery business for Dr. Pepper-Tru-Ade beverages; (2) an advertising business—outdoor signs, showcards, etc.; (3) a machine shop where the owner-inventor develops patented inventions.

*The Solution:* The architect exploited the possibilities offered by the change in grade: deliveries of raw materials for bottling are made at an upper level wing, opening onto a side street. These, then, are later fed by gravity to the bottling mechanisms in the open-front processing room on the floor below. Both convenience and esthetics were served by the step-down series of garages on the lower side of the site where loaded trucks are stored overnight, ready to take off in the morning at the extreme opposite end from the raw-materials entrance. At the intermediate level is the "home coming" traffic entrance where trucks return with "empties" for reloading. The business entrance

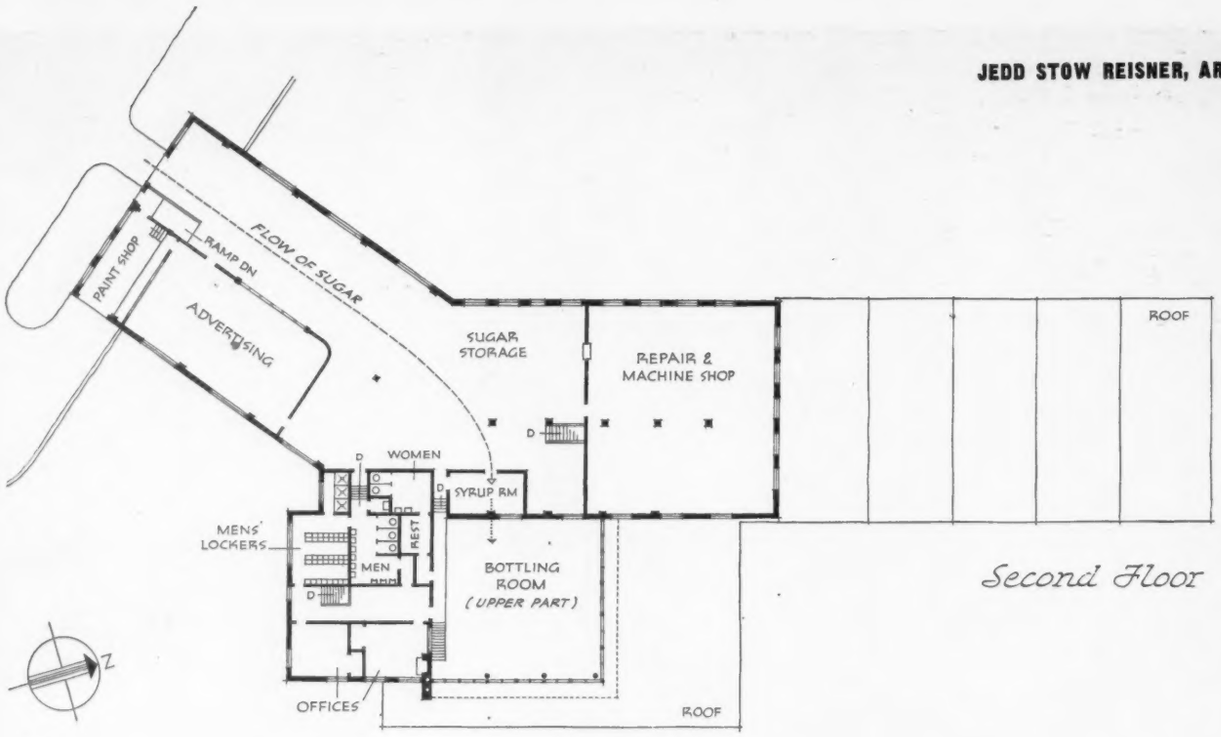


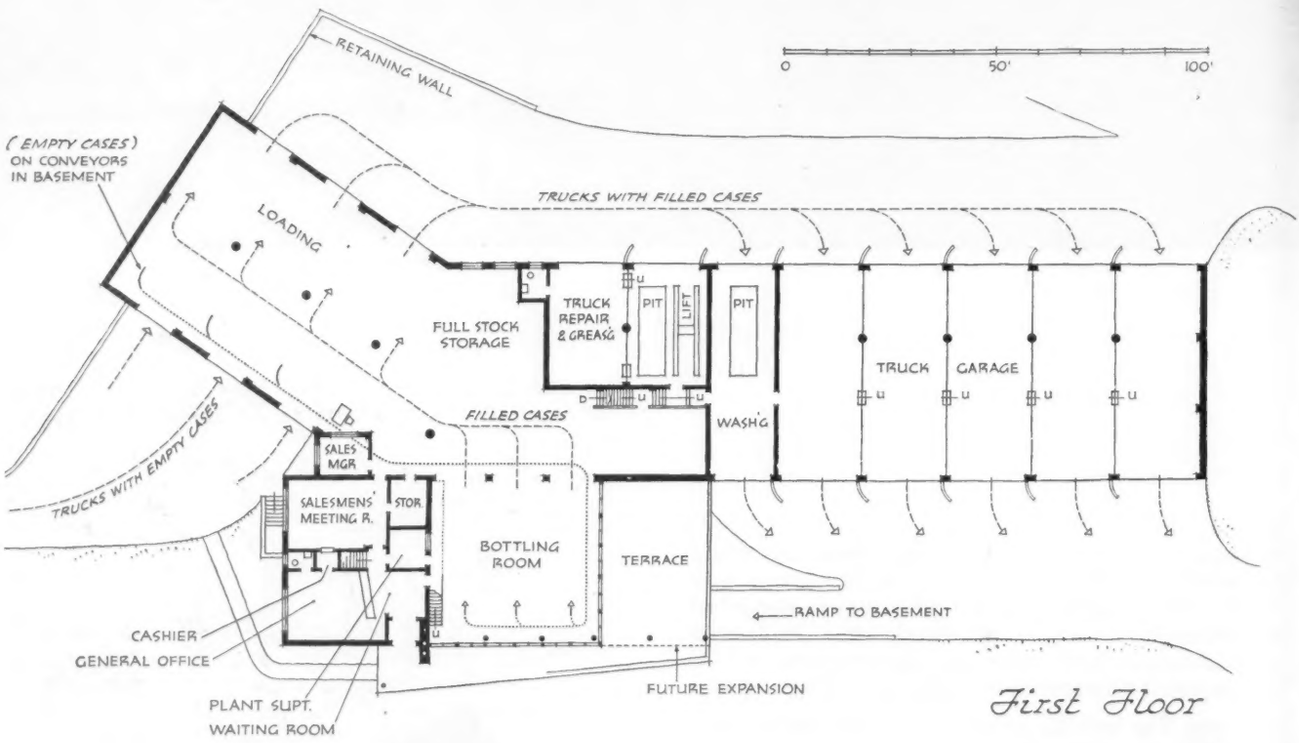
and display-case room are also at this level. The whole is schemed in a broad horizontal design punctuated with a single sharp vertical element—a combined power-plant chimney and standard for a trademark clock. Detailed floor plans and interrelation of the three separate enterprises are shown on Page 74.

*Structure:* The building is of steel frame and concrete floor-slab construction. Exterior walls are a medium-brown, semi-glazed brick, chosen with an eye to showing off to best advantage the shining white of the bottling devices. The canopy in front of the bottling room is of concrete, dimensioned to keep sun away from the large glass window and to reduce reflections. This canopy, extending beyond the present confines of the bottling room, is so designed that the contemplated 2-bay extension of the bottling space will fit into it with no additional structural alteration. Similarly, the red tile floor of the bottling room is carried out to the present terrace so that finished flooring will all be in place when the room is enlarged.



Plot Plan




*Raw materials enter at left of the upper floor level, proceed to storage and are later mixed with syrup and fed by gravity to the bottling room. As the filled bottles leave the bottling room, they are moved by gravity conveyor to the various platforms ready for loading onto trucks. Loaded trucks then roll to overnight storage in the garages at the end of the building. When trucks return with boxes of "empties," the boxes are moved by conveyor to the platforms near the truck entrance and thence taken underground back under the bottling room for storage and so on up to begin their travel back to the customer.*

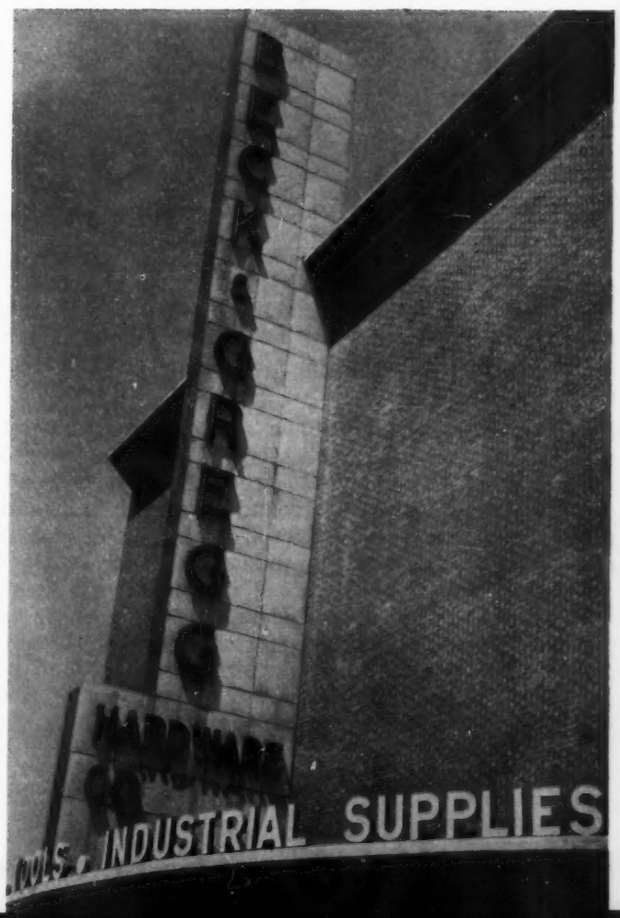
*The advertising business is assigned a corner of its own. Adjoining is a paint shop for trucks, both the plant trucks and jobs brought in by outsiders. The machine shop on the second floor and the garage under it accommodate the owner's inventive activities, and the servicing and repair of trucks.*

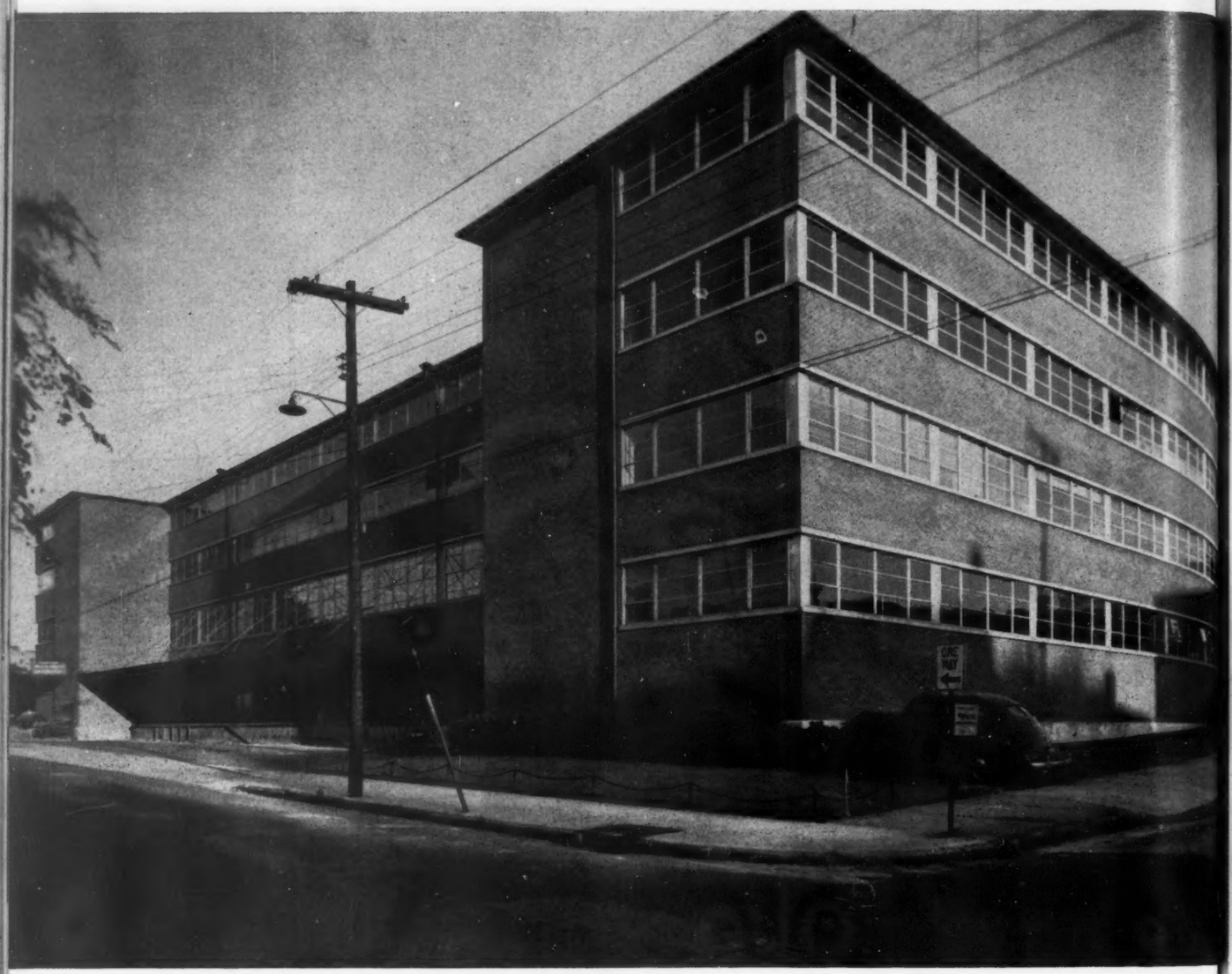
Rodney McLay Morgan

# Hardware Warehouse and Retail Store, Atlanta, Georgia

**BURGE & STEVENS, ARCHITECTS-ENGINEERS**

*Something has surely happened to architecture—we call it progress—when a warehouse can boast of being one of the best contemporary buildings in town. An ever-growing number of such instances is encouraging testimony that good architecture is finally—and, let us hope, permanently—becoming associated with projects that serve every phase of human activity, rather than merely those in which a measure of ostentation is involved—impressive civic monuments, pretentious rich men's homes, etc. In the rather odd building type presented here—a hardware wholesale warehouse, combined with a small retail outlet—there is a particularly happy synthesis of plan, structure, and finished design—a major criterion for judging progressive work.*

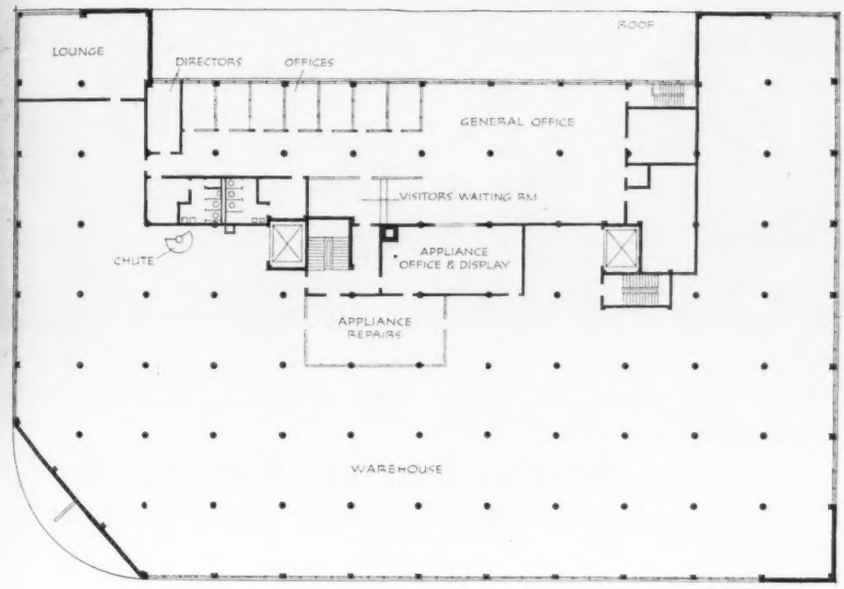




*The Need:* A building primarily to house a wholesale hardware business but also to include a retail store, which normally accounts for approximately 10 percent of total sales.

*Solution:* The near-downtown site chosen has three street frontages; the retail store is placed across the corner where the two most prominent streets meet. The third street front, at ground-floor level, is largely given over to a truck platform, protected by a deep canopy to allow loading or unloading in all kinds of weather. General offices occur on the second floor; the rest of the floor area consists of open warehousing space, connected by both elevator and spiral chute with the main floor and truck platform. On the plot, as the building is now built, there is a considerable area provided for customer and employee car parking. At a later date, some of this space may be used for expansion of the building.

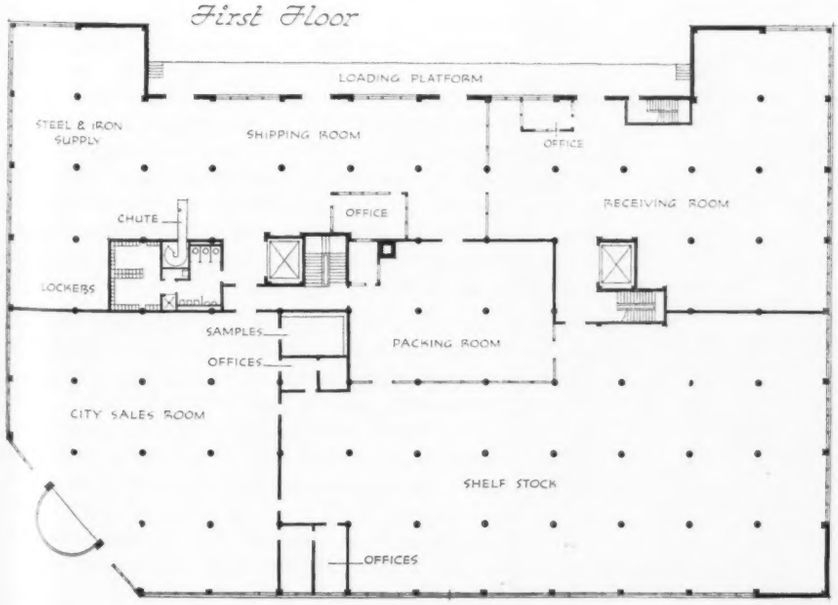
The framework of the building uses flat-slab construction, with the slabs continuing out beyond the wall line to form continuous lintels above the window bands (see section). Exterior cavity walls are brick, with one inch of air space between the layers. All interior walls in the warehousing portions are simply the exposed brick; painted plaster is used on walls of offices, show rooms, and toilets. Office ceilings are surfaced with acoustical tile. The show rooms and offices are lighted by fluorescent fixtures; elsewhere, incandescent lighting is used. An inter-office communication system connects all areas. The building is heated by unit heaters, supplied with steam from a central heating plant in the basement.

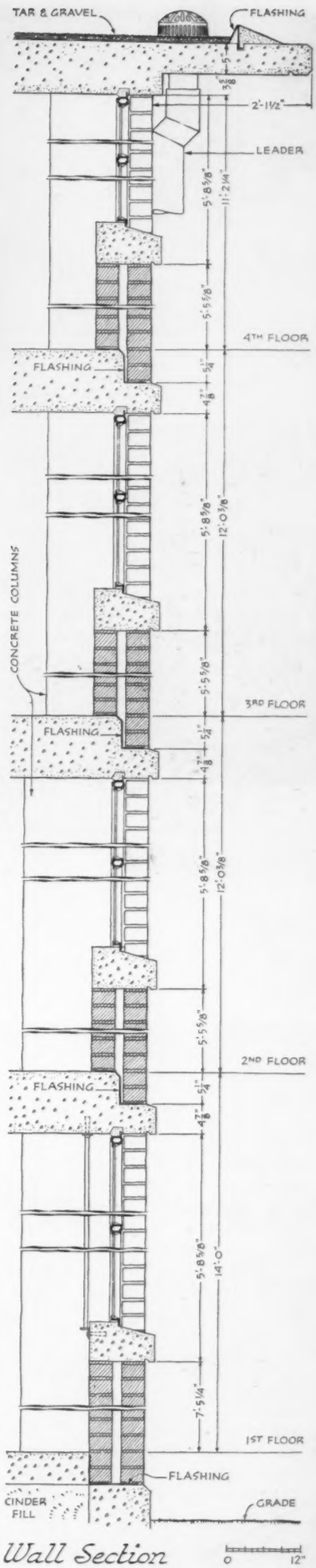



Second Floor

10' 0 50'

First Floor




Wall Section

0 12"

*P. A. Dearborn*

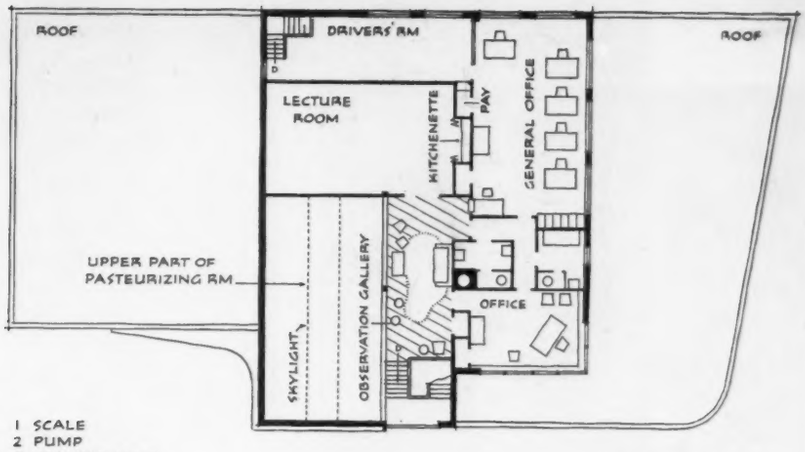
# Sunrise Dairies, Hillside, N. J.

**SERGE P. PETROFF AND HARVEY P. CLARKSON, ASSOCIATED**

*Progressive architecture is considerably more than good planning, sound construction, and pleasing arrangement of elements. Among other things, it is purposeful planning, design that assists in the accomplishment of specialized modern tasks. This dairy, for instance. In addition to being space suitably organized for the packaging of milk and its by-products, it is a billboard advertising the Sunrise enterprise, a public-relations medium that invites passers-by to view the immaculate environment, and a flexible precision tool that enables the owner not only to operate efficiently but to maintain the constant cleanliness he is proud to emphasize.*

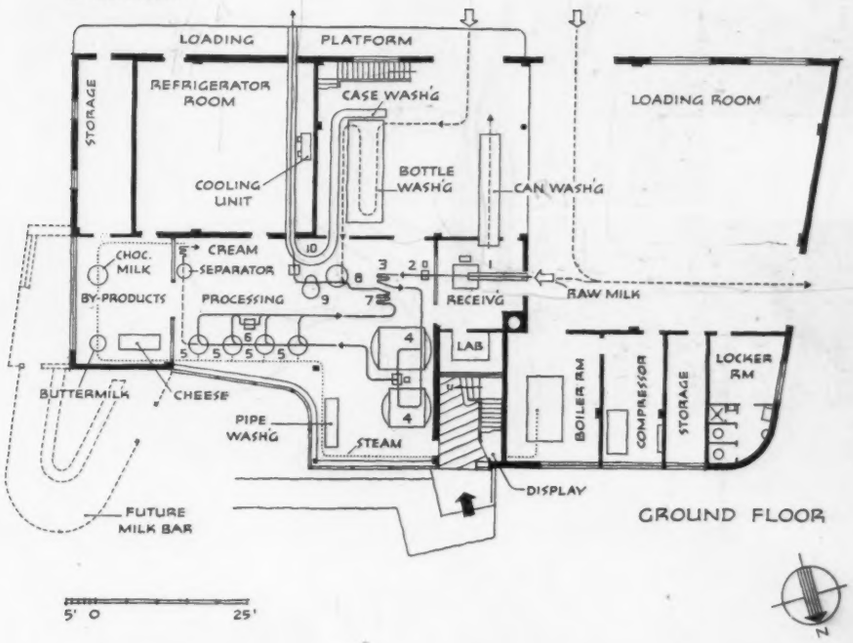
*Background:* At its inception, this project had the inestimable advantage of architects sincerely striving toward an efficient progressive scheme and an owner who shared their determination. The owner, Bo Adlerbert, whose family has been in the dairy products industry for more than 150 years, stated his goal without reservation: "To create a pasteurizing plant which achieves the utmost in sanitation, efficiency, and performance." The architects analyzed the problem thus: "In such a highly competitive industry as the processing and merchandising of milk, governmental health regulations and price restrictions resolve the difference between success and failure down to the saving of pennies by efficient operation and to the attraction of customers by advertising and service." No question here of the dead hand of stylism!

*Solution:* An intensive study by Mr. Adlerbert and his equipment engineers determined the most practical organization of piping, pumping, conveying, and other processing elements, and as the architects put it, "the building was wrapped around the operating unit." The site, on a main express highway where most reactions would be from speeding motorists, suggested an exposition-type building with a huge area of glass that would present a striking, immediately comprehensible, view of the gleaming, stainless steel machinery of the pasteurizing room.




SECOND FLOOR

1 SCALE
2 PUMP
3 COOLING COILS
4 STORAGE TANKS
5 PASTEURIZERS
6 HOMOGENIZER
7 RE-COOLING
8 FILLING
9 CAPPING
10 CONVEYOR



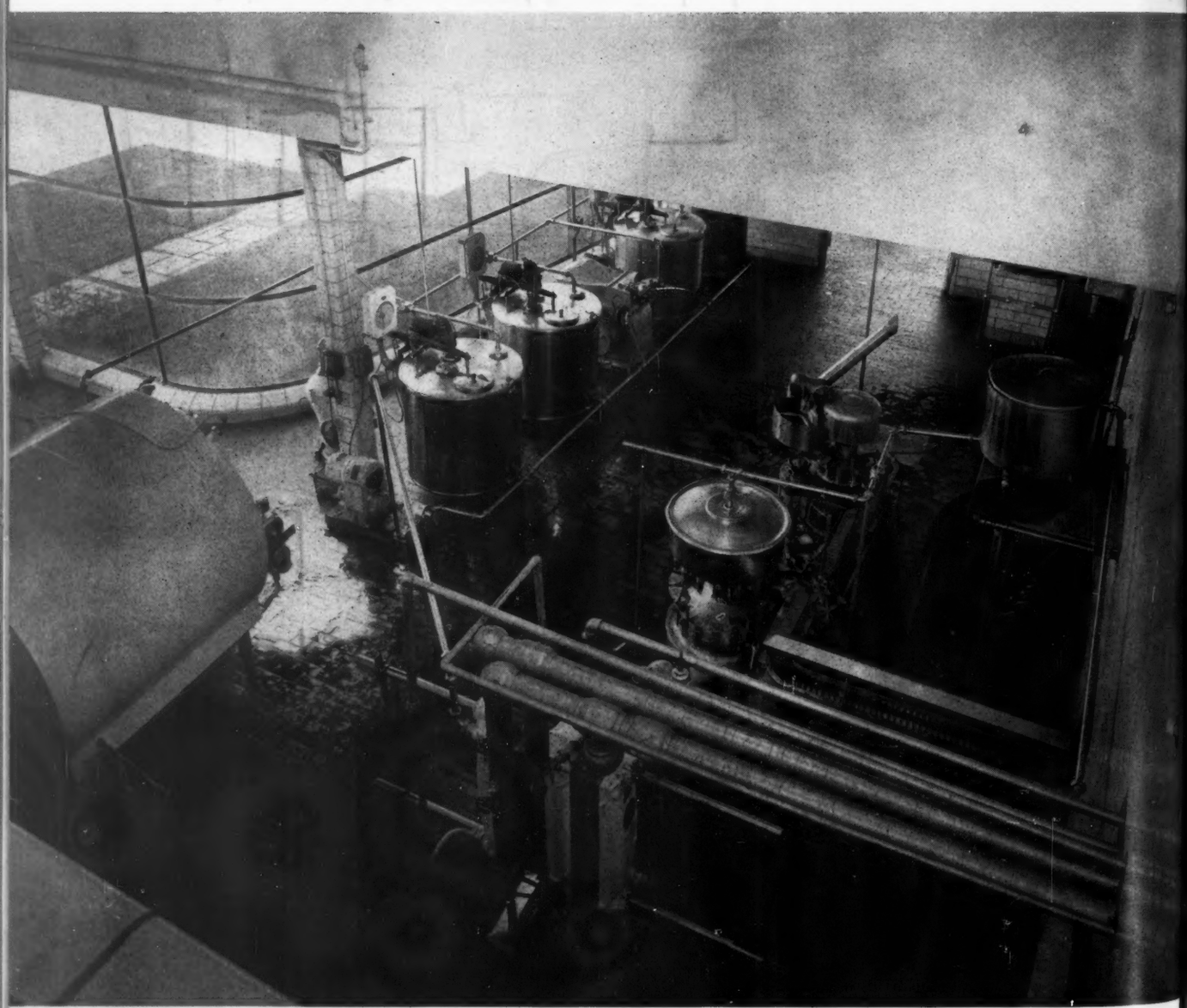

GROUND FLOOR

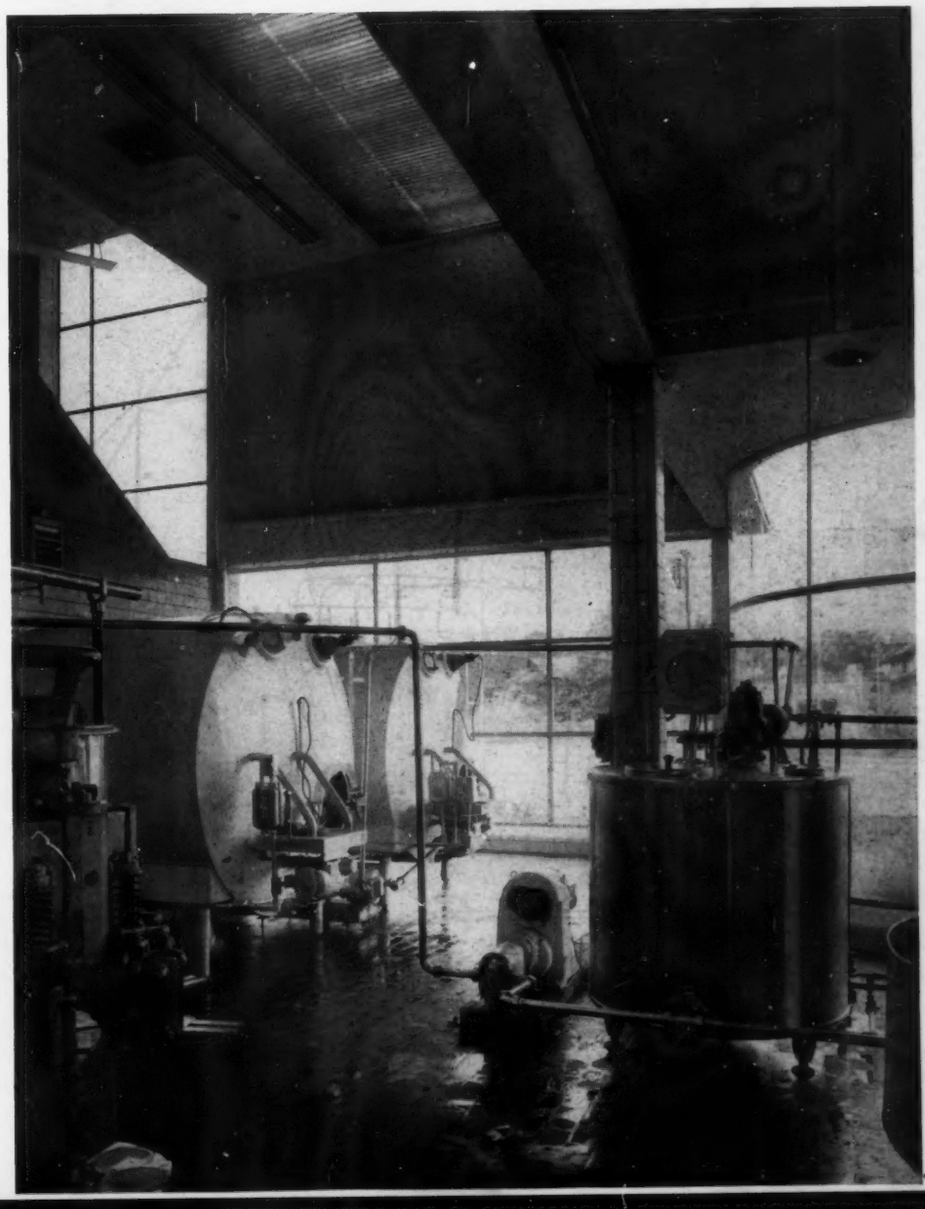
Circulation of milk from its raw state through all steps to bottles loaded on trucks involves no backtracking or cross-overs. During the war, the plant operated with as few as three men to a shift.

Facilities for giving the public a close view of the process include an observation gallery at the second floor level and a lecture room (now being completed) for group instruction. Both these public spaces and the private offices are reached directly from the main entrance, and are used without disturbing plant operation. A future income-producing unit is a Milk Bar on the highway front.

*Construction:* The masonry bearing walls are of cinder concrete block with brick facing on the exterior; steel girder framing bears on the walls or on pipe columns on the interior and at the plate glass front. The first floor is a reinforced concrete slab. Second floor and roof framing are of wood, with wood double flooring surfaced with either linoleum or asphalt tile. Exterior copings are terra cotta.

Ventilation is provided by wind-driven exhaust fans located on the roof. The steam boiler that manufactures steam for processing also provides hot water and heat through unit heaters and radiators.





*Particularly difficult problems encountered were: (1) coping with the perpetually moisture-laden air (caused by the live steam used in the pasteurization process) that required special light fixtures and careful consideration of interior surfacing materials, and (2) the fact that lactic acid in milk spilled on the floor, although the floor is frequently flushed, would cause ordinary concrete to disintegrate within a few months. The solutions were to use wall finishes of ceramic glazed tile (ivory on the rear wall and Della Robbia blue at the stairway end) and on the floor, a special acid-resisting brick laid in sulphur-bearing mortar.*

*Hedrich-Blessing Studio*

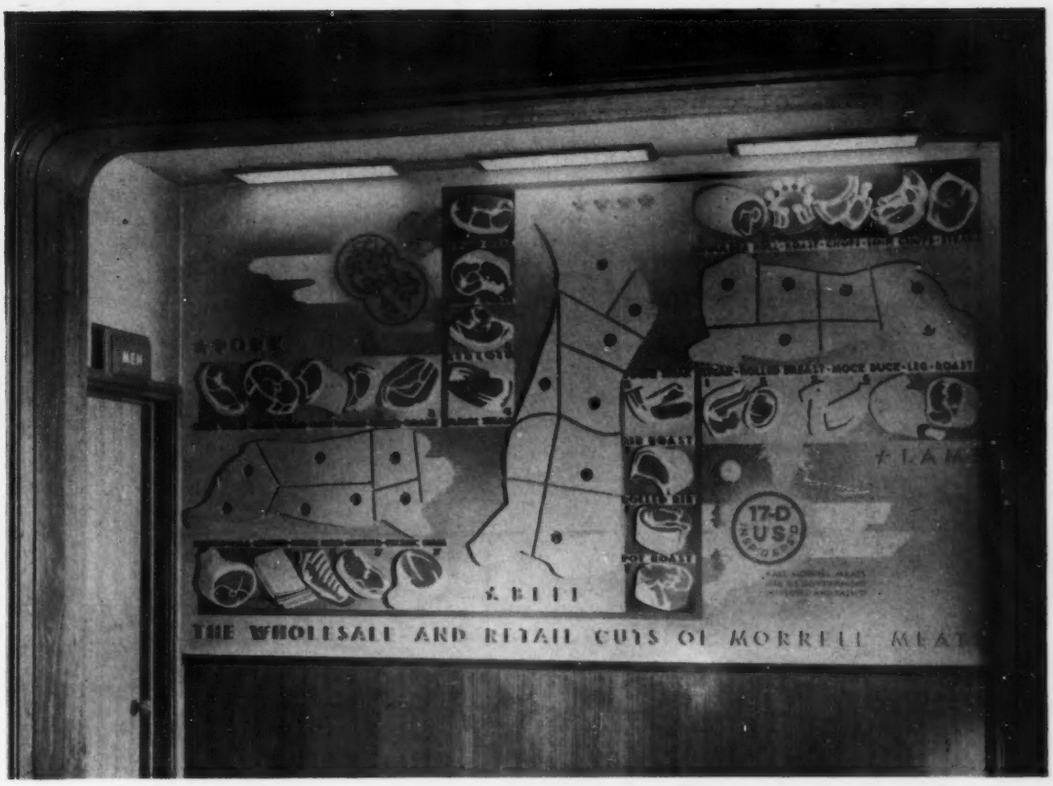
# Visitors Building, John Morrell & Co., Sioux Falls, S. Dak.

**HAROLD SPITZNAGEL, ARCHITECT**

*On a visit to a meat-processing plant, it is doubtful if many would expect to receive such a gracious welcome as is offered by the small structure presented here. An architectural answer to the processor's wish to give the public a close-up view of the process, it is a direct lineal descendant of World's-Fair types of exhibit buildings—complete with photomurals and lantern-slide equipment.*

*Problem:* To provide a waiting room for visitors to a meat-processing and packing plant where they would be welcomed and given a preview of the "coming attraction."

*Solution:* The plan is organized so that the visitor, after being greeted at the door by a receptionist, and registering, passes into the semi-circular-ended auditorium. Here he may either find a comfortable chair or study the integrated series of photomurals by Ken Hedrich that show successive steps in meat production. When enough guests have gathered, the receptionist operates the room lights, a screen is lowered from the

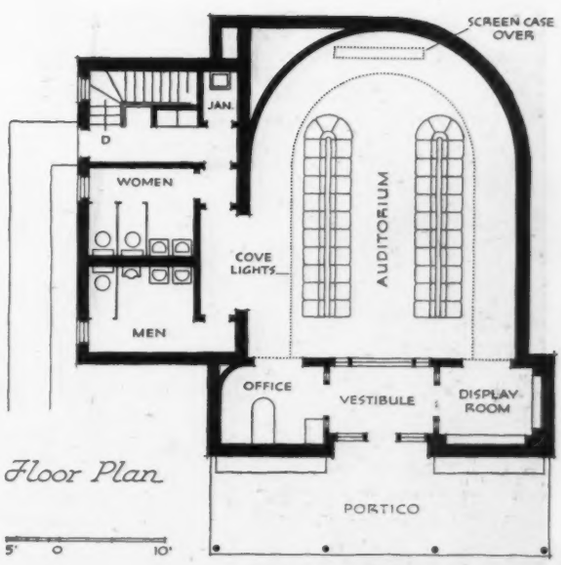



*In the small recessed passage at the left of the auditorium, a colorful, three-dimensional plaque forms a graphic description of the various cuts of meat.*

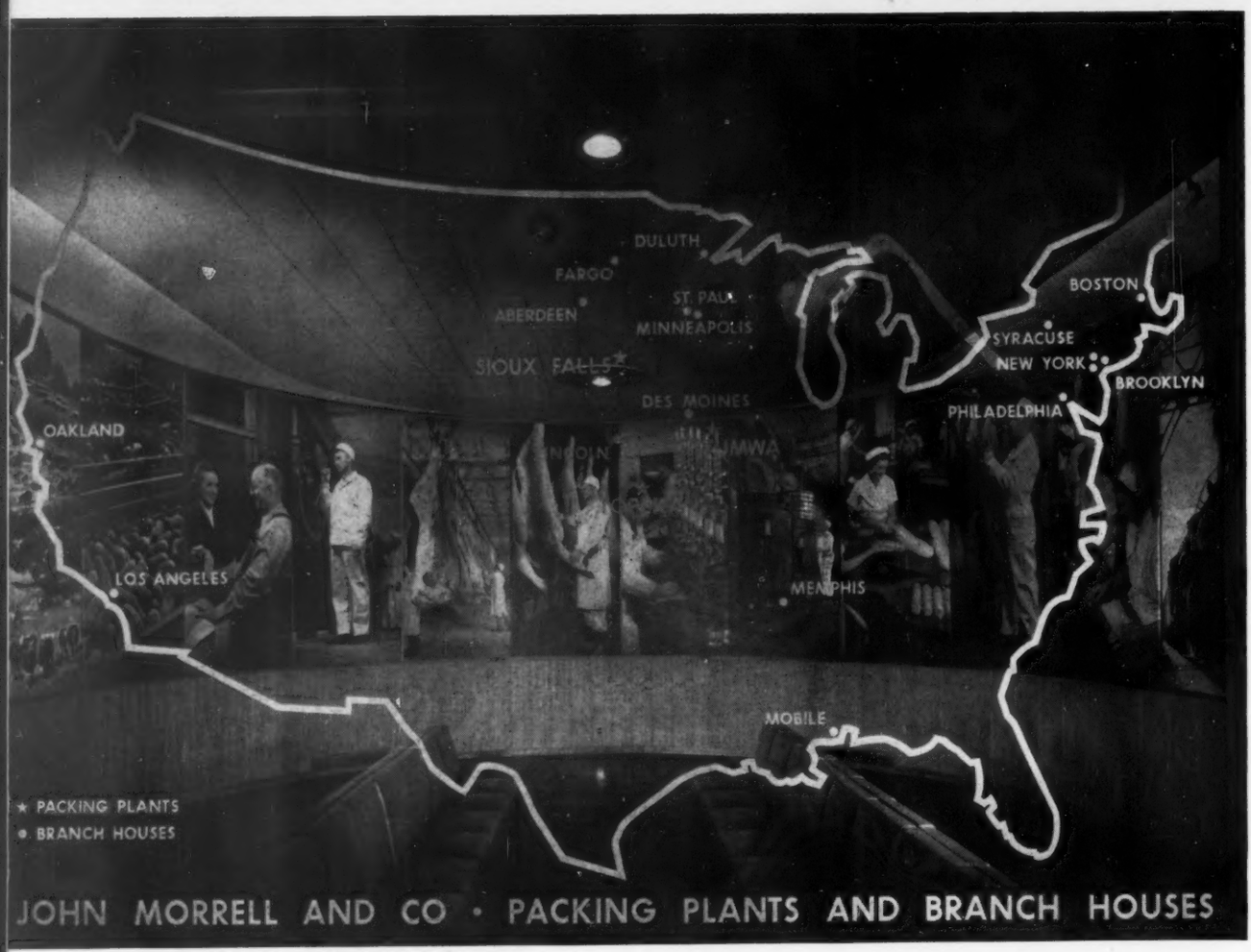
ceiling at the far end, and a series of slides showing the Morrell plant operation are explained by a guide. In the first year (before the war) more than 18,000 visitors attended; during the war, the building was temporarily closed. In the basement is a heater room and space for storing office records.

*Structure:* The basement is of poured concrete; first floor walls, of common brick and tile. These exterior walls are painted black (the building adjoins a railroad siding) which is in striking contrast to the white of the marble in the entrance recess and the cast iron trademark overhead. The pipe porch columns are warm gray and the doors themselves are terra cotta color. Black quarry tile is used on the porch floor, and the ceiling is painted gray-blue. Vestibule walls and flooring are of rubber.

The building is completely air conditioned with a brine coil from the central cooling system, using a gas-fired unit for the heating cycle. The waiting room is lighted by fluorescent lamps concealed in the recess of the acoustically treated ceiling baffle.




*Floor Plan*



*Between the vestibule and the main room, the glazed partition has a sandblasted map showing the location of the company's plants and branches. In the waiting-lecture room, flooring, wainscoting, and trim are all walnut or walnut veneer; the photomurals are sepia. The reflective portion of the ceiling is painted dead white and the acoustical baffle and side walls are gray-green.*

# Progressive Architecture — Rich's, Inc.
## Architectural Competition

# PROGRAM

For the Design of

# A Realistic House for a Family in Georgia

**CLOSING DATE — JANUARY 21, 1946**

### PRIZES

| | |
|---|---|
| First Prize . . . . . | $ 3,000.00 |
| Second Prize . . . . . | 1,500.00 |
| Third Prize . . . . . | 1,000.00 |
| Fourth Prize . . . . . | 500.00 |
| 25 Mentions at $100 each . | 2,500.00 |
| Special Georgia Prize . . . | 1,500.00 |
| TOTAL . . | $10,000.00 |

### JUDGES

Thomas Harlan Ellett, F.A.I.A., New York
Ernest A. Grunsfeld, Jr., F.A.I.A., Chicago
Richard Koch, F.A.I.A., New Orleans
Ernest J. Kump, A.I.A., San Francisco
Roy F. Larson, F.A.I.A., Philadelphia
Roland A. Wank, A.I.A., Detroit
Robert Law Weed, A.I.A., Miami

**All parties to this competition agree that the Jury of Award has authority to make the awards and that its decisions shall be final.**

This competition is open to all architects, architectural draftsmen, and architectural students. Under a ruling by the Committee on Competitions of the American Institute of Architects, Institute members are permitted to enter. Any contestant may submit more than one design. No employee of either Reinhold Publishing Corporation or the sponsors is eligible.

**Authorized by Reinhold Publishing Corporation**
**Sponsored by Rich's, Inc., Atlanta, Georgia**
**Conducted by Henry J. Toombs, A.I.A., Professional Adviser and Kenneth Reid, A.I.A., Associate Professional Adviser**

# PROGRAM

Despite all the efforts made by architects and others to help solve the problem of the Small House, there seems to be some inherent difficulty that makes these attempts fall short of complete success. Like the pot of gold at the end of the rainbow the perfect small dwelling is yet to be discovered. The result is that, looking about the country, one finds that the vast majority of small houses are badly designed or badly constructed or both and that the best of them still have some faults, either in the eyes of their occupants or in those of their neighbors.

It is true that over the years there has been some improvement, which may be traced to the thinking that has been done in each decade by the best architectural designers. Wide publication of comparatively few examples of good houses actually built and of designs prepared for periodic competitions have helped in the gradual spread of improved planning ideas which are then adopted and imitated in houses built during the ensuing period.

Competitions, however, often result in winning designs which, though brilliant and helpfully prophetic, involve expensive construction beyond the pocketbook of the average family. Such designs also sometimes rely on the introduction of some special materials or equipment known to be in the research stage but unlikely to be economically available within the near future.

It is the wish of both **Progressive Architecture (Pencil Points)** and the sponsor, **Rich's, Inc.**, of Atlanta, Georgia, that this competition shall be a realistic one, seriously aimed to encourage design of small houses that will not only be "better" but within the reach of the $3,000-a-year white-collar family that wants to build a home right after the war.

**Rich's, Inc.**, naturally vitally interested in the well-being of the state it serves, is thinking particularly of houses "good to live in in Georgia." Since the difference in climate between Georgia and all but the northern group of states is in degree only, however, it is probable that the resulting designs will have a broad application so that designers need not feel that the problem is of limited scope.

## PROBLEM

To design a house that could really be economically built in the State of Georgia in the immediate post-war period out of building products known to have been on the market before the war or known to be actually ready for production when plants are re-converted. Beyond this limitation, plus consideration of a reasonable cost for the family of clients described, the designer is free to choose the materials and equipment he considers most appropriate.

The house is for an American family of four—father, mother, and two small children—a boy of five and a girl of two. Their income is $3,000 a year. For reasons of convenience to work, school, shopping, etc., their building site must be in an established residential section of a still growing city. Although they would like to have a larger piece of land, they can afford only an inside lot 60 feet wide and 150 feet deep. They have a choice of four approximately level lots of four different orientations—on the north or south side of a paved street running east and west, or on the east or west side of a street running north and south. You as their architect will guide their choice and will design their house and some appropriate type of garage to fit the site chosen.

After the lot is paid for, the family budget will allow the building of a house containing a maximum of 1,350 square feet of floor area for the house exclusive of a garage and a heater room which may be either above or below grade. Basements and usable attic floors must be included in this total area.

Local restrictions permit no part of the house to be nearer than 20 feet to the street or nearer than 10 feet to the side and rear lot lines. (Fences, however, and walls not exceeding 6 feet high may be built on the restricted part of the property.)

The clients for whom you are to design the house are average people who have been looking forward for a long time to having their own home. They have been studying the pages of current magazines and are sympathetically aware of the contemporary trend in design, especially in regard to its greater promise of comfort, convenience, and freedom from a good deal of household drudgery. They definitely do not wish conformity with any traditional "style." At the same time they are desirous that the house they build shall take its place gracefully among its older neighbors. They have an idea that a good architect can give them something that is thoroughly modern and thoroughly appropriate to the region, not at all stodgy and imitative, yet so well proportioned and pleasant of aspect that it will excite general admiration rather than amazement.

The designer will keep in mind not only the present needs of the family but its future needs as the children grow up. He should also have an answer to the problem of caring for an occasional guest or a visiting parent. Realizing that a house never has too much storage space, he will contrive in an attic or cellar or otherwise to provide at least 900 cubic feet of easily accessible and well-disposed storage space for the miscellaneous needs that occur in every ordinary household over and above the usual closets and kitchen cabinets.

The designer will keep in mind the Georgia climate which has a fairly wide range. It is generally accepted that an up-to-date house in Georgia is not comfortable in the winter without a heating system. (Gas is available in this area and is relatively cheap.) It can be very cold in winter and very hot in summer. March ordinarily sees the last of winter and the numerous flowering plants begin to bloom in the latter part of March. April brings full spring. May is warm and inclined to be hot towards its end. June, July, August, and most of September are definitely hot. One seeks the shade, particularly in the middle of the day. Spring and summer rains may be frequent and are apt to be sudden and heavy. Breezes in summer are most generally from the southwest, usually arise in the evening, and help to relieve the heat of the day. In October and November the leaves turn and the evenings are cool. December, January, February, and the early part of March are commonly cold and raw with occasional warm sunny days. The prevailing winter winds come from the northwest. There are freezes, sometimes of several weeks' duration, but there is litttle snow. Elevation above sea level ranges from 500 to 1,000 feet. Average temperatures, rainfall, and sunny days for the vicinity of Atlanta are as follows:

| | WINTER | SPRING | SUMMER | FALL |
|---|---|---|---|---|
| AVERAGE OF MAXIMA | 52° | 70° | 80° | 70° |
| ABSOLUTE MAXIMA | 78° | 97° | 103° | 102° |
| AVERAGE OF MINIMA | 36° | 52° | 69° | 54° |
| ABSOLUTE MINIMA | 8° | 8° | 39° | 14° |
| TOTAL PRECIPITATION FOR DRYEST YEAR | 9.4" | 6" | 12" | 5.7" |
| TOTAL PRECIPITATION FOR WETTEST YEAR | 26.7" | 16" | 14" | 11.1" |
| AVERAGE HOURS SUNSHINE | 463 | 700 | 814 | 696 |

The comfort of a house in Georgia would be increased by

(a) Cross ventilation. While exhaust fans are widely used to pull in cool evening air in summer they do not materially help daytime comfort. (It is assumed that summer air conditioning is not financially possible at this time to the family described.)

(b) Porches can be thought of as summer living rooms but to be useful they must be screened for insects (as all other openings must be). It should be noted that porches are not pleasant when flooded with summer sun.

(c) Terraces, shaded from the sun in summer and yet open to it in winter are most pleasant contributions to the enjoyment of out-of-doors.

(d) Trees and shrubbery, thoughtfully located, can materially contribute to the comfort, privacy, and pleasure of a Georgia home.

**Considerations of the Jury of Award**

(1) The architectural merit of the design, including its regional suitability and the skill with which the plans are worked out to fit the needs of the hypothetical client.

(2) Practicability and economy of construction, wherewith the client's budget may be met.

(3) The special prize will be awarded for the best house submitted by an architect or designer who lives and works in Georgia.

(4) The judges will not be influenced by quality of delineation.

**COMPUTATION OF FLOOR AREA (Mandatory)**

Measurement of enclosed spaces shall be taken from the inside of exterior walls with no deductions for partitions. Horizontal area occupied by stairs shall be counted as a part of the floor from which they rise. Open porches or screened porches shall be counted at half their full area. Entirely glassed-in porches shall be counted at their full area. Designs that exceed 1,350 square feet total floor area (exclusive of garage and heater room) will not be considered.

**DRAWINGS (Mandatory)**

All required drawings for each design shall be composed on a single sheet of opaque white paper, trimmed to exactly 25" x 36". The sheet is to be read with its long dimension vertical and shall contain the following items in **opaque black ink.** (No diluted ink, color, wash, airbrush, or applied transparent shading tissue.) All lettering shall be at least ⅛" high.

(1) Plans at ¼" equals a foot. The use and dimensions of each room or space shall be indicated so that they will be clearly legible when reproduced at one-quarter size. Suggested furniture arrangement shall be shown.

(2) Perspective of the house as seen from the street, rendered in ink with pen or brush and so laid out that true heights may be measured at a scale of ¼" = a foot on the corner nearest the observer.

(3) Elevations, at ⅛" equals a foot, of the two sides of the house not shown in perspective.

(4) Plot plan at any convenient legible scale showing location of house and garage and arrangement of the property.

(5) Separate single line diagram of floor plans at small scale indicating method of computing total inside floor areas.

(6) Drawings shall bear the title A REALISTIC HOUSE FOR GEORGIA with the subtitle PROGRESSIVE ARCHITECTURE—RICH'S, INC. COMPETITION and shall be signed with a device or *nom-de-guerre.*

(7) A single sheet of 8½" x 11" paper, to be enclosed with the drawing, shall contain a typewritten outline specification listing principal materials and items of equipment for the house.

(8) **Optional.** It would be interesting to include on the drawing, at small scale, a diagram showing how the same house might be placed on each of the three lots of different orientation which were rejected by the client upon your advice.

### ANONYMITY (Mandatory)

Drawings shall contain no identifying mark other than a device or *nom-de-guerre.* Each drawing shall be accompanied by a plain opaque sealed envelope bearing the same device or *nom-de-guerre* as the drawing and containing a slip of paper on which the true name and complete address of the competitor are stated. In the case of drawings submitted by architects or designers now living and working in Georgia or by residents of Georgia now temporarily absent from the State because of war service, the accompanying envelope shall bear, in addition to the *nom-de-guerre,* a capital "G," lettered ½" high, on its upper right-hand corner. This is for the purpose of identifying to the Professional Adviser but not to the Jury the drawings eligible for the Special Georgia Prize. The envelopes will be opened by the Professional Adviser in the presence of the Jury, only after the awards have been made.

### DELIVERY OF DRAWINGS (Mandatory)

The drawings shall be securely wrapped, either flat or in a strong tube not less than 2½" in diameter and addressed to Kenneth Reid, **Progressive Architecture—Rich's, Inc. Competition,** 330 West 42nd Street, New York 18, N. Y. In the case of drawings sent registered, competitors must not demand a return receipt. Drawings shall be delivered to the office of **Progressive Architecture** or placed in the hands of the post office or express companies not later than 6 P.M., standard time, Monday, January 21, 1946. Drawings will be accepted at any time before the close of the competition. They will be fully insured from the hour of their receipt.

Drawings are submitted at the competitor's risk but reasonable care will be exercised in their handling, safekeeping, and packaging for return.

### EXAMINATION OF DESIGNS

The Professional Advisers will see that the drawings are expertly checked to insure that they comply with the mandatory requirements. No award will be made to any design that fails to comply. No drawing, whenever received, will be shown or made public until after the awards by the Jury.

### JUDGMENT

The Jury of Award will meet at the Bon Air Hotel, Augusta, Georgia, on February 13, 14, and 15, 1946.

### ANNOUNCEMENT OF AWARDS

The Professional Advisers will send by mail, to each competitor, the names of the winners of the Prizes and Mentions as soon as possible after the judgment. This information will be published in the March, 1946, issue of **Progressive Architecture.**

### REPORT OF THE JURY

The winning designs and a full critical report by the judges will be published in **Progressive Architecture** for April, 1946. Each competitor will receive a copy of this report.

### THE PRIZE WINNING DESIGNS

The designs awarded Prizes and Mentions are to become the property of the sponsors, who agree that whenever and wherever any of the drawings are published or exhibited, the names and addresses of the designers will be clearly displayed and all resulting inquiries will be forwarded to them. The sponsors further agree that any models that may be built from any of the designs for exhibition purposes will be faithfully executed in exact conformity with the original design.

The sponsor reserves the right to build, for demonstration purposes, one house from each of one or more of the premiated designs. In this event, the sponsor will pay to the architectural author of each design so used, a professional fee of six percent of the contract cost. This fee will be in addition to the Prize or Mention award. For this fee the recipient agrees to furnish a full set of contract working drawings, necessary details, and specifications, which must be adequate in the judgment of the Professional Adviser.

### RETURN OF DRAWINGS

Non-premiated drawings which are not reserved for exhibition or publication will be returned in a reasonable time, postage and $50.00 insurance prepaid.

### NOTICE TO COMPETITORS

Any competitor who has difficulty in securing paper of the size called for will be provided by **Progressive Architecture** with a sheet of Whatman's 133-pound Hot Pressed paper, Double Elephant size, for one dollar. The paper will be shipped prepaid in a tube suitable for remailing the finished design. Address remittance to **Progressive Architecture,** 330 West 42nd Street, New York 18, N. Y.

# MODERN GLUES AND BUILDING CONSTRUCTION

by Eugene R. O'Hare

*Mr. O'Hare, technical director for the Casein Company of America, is a member of: A.S.T.M. Committee D 14 (Adhesives); Low Pressure Laminating Committee of the Society of the Plastics Industry; Wood Products Division, A.S.M.E.; and was formerly chairman, Technical Committee, Resin Adhesive Manufacturers' Association.*

The war is over; architecture and building construction are changing; each new building material is sure, according to its proponents, to revolutionize building construction. A lesser claim than that would hardly attract notice nowadays, and the claim is made for even the most insignificant materials.

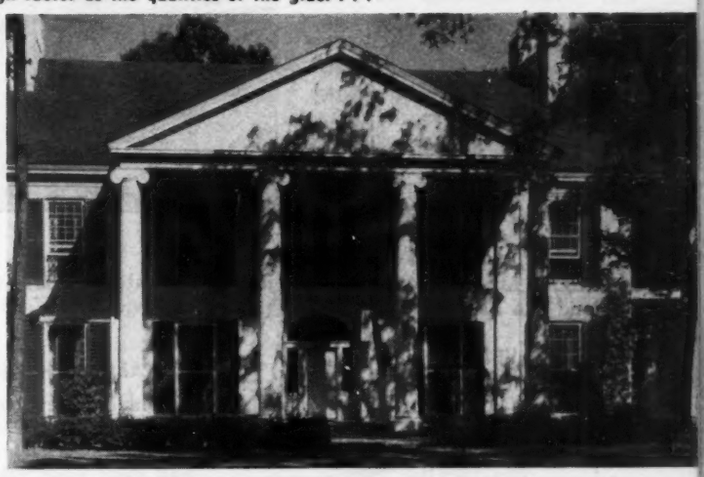
It has even been seriously suggested that glue, the stuff which sticks pieces of wood together, is going to revolutionize building construction. This extreme prognostication is certainly hard for any but a glue man to take seriously, and the author appreciates the opportunity here to vary the reader's diet of postwar wonder stories, and to gain a certain distinction, by making somewhat more modest claims for glue.

## CONSTRUCTION WILL CHANGE

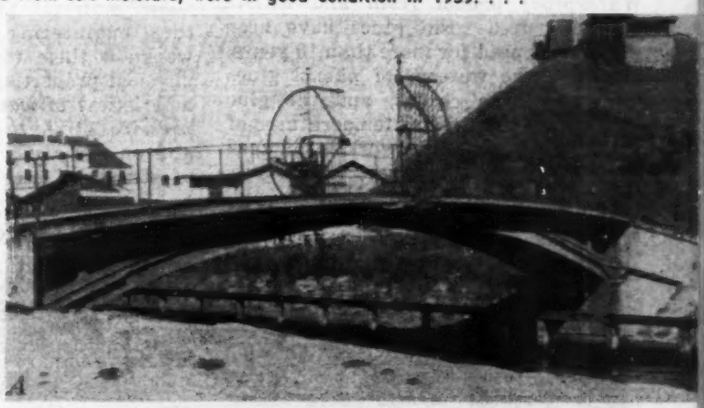
However, this I cannot do, because glue *is* going to revolutionize a substantial proportion of building construction. "Revolutionize" is still a strong word for all its glib use of late, yet there come to mind only four examples of technical developments which have had as significant effects on building design, engineering, and construction. These are **1**, use of portland cement as a mortar (or "glue," if you please) following its invention in 1812, which pushed the monolithic masonry building to height limits set only by loss of floor space due to wall thickness; **2**, substitution of riveted steel frames for masonry-and-cast-iron-column bearing walls, which gave us the skyscraper; **3**, use of poured portland cement with steel reinforcing; and **4**, fabrication of steel by welding, which (like cement mortar bonding of masonry units) is in the nature of a "gluing" process. (Unlike the first three examples, welding has not yet flowered fully, but indications of its ultimate applications are already apparent.) It is probable that the use of glue will develop with considerably more rapidity than has welding.

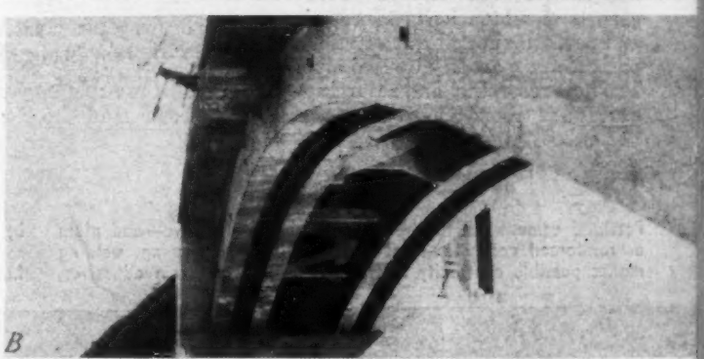
What is this new glue, and how will it change building construction? How radically does it differ from the glues we have known and used in the past: phenol resin glue for exterior plywood panels

**1** **PROGRESS: Once glue could only be used outdoors for such purposes as porch columns, where the characteristic swelling of wood was as important a design factor as the qualities of the glue. . . .**

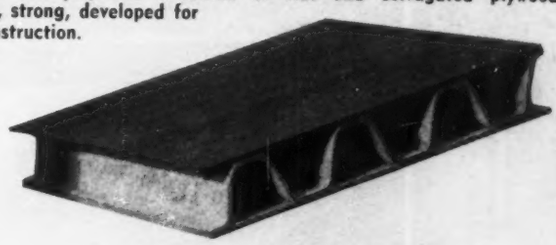


**2** **Casein glue made possible such structures as this bridge (views from side and beneath) in Denmark, built in 1929 of laminated wood arches, spanning 52 ft. Non-waterproof glue joints are paint-protected, flashed, isolated from soil moisture, were in good condition in 1939. . . .**



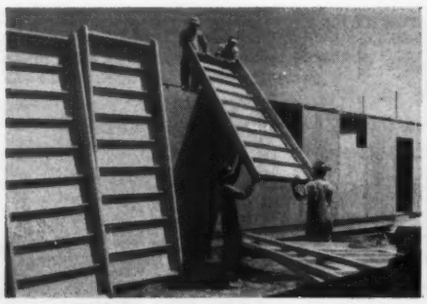


**3** **Waterproof resin glues make possible new building materials and techniques; for example, this sandwich of flat and corrugated plywood, lightweight, strong, developed for bomber construction.**



# GLUE developments, like earlier innovations, can transform building techniques . . . . .

USES ALREADY COMMON:
Plywood in flat sheets . . . . and curved shapes . . . .



casein glue for porch column stave joining, and the like?

### THE NEW GLUES

These new glues (there are two of them) are: room-temperature-setting resorcinol, and intermediate-(warm)-temperature-setting resorcinol-phenol synthetic plastic resin waterproof glues.

Room-temperature resin glues and waterproof resin glues are not quite new. *Waterproof* phenol resin and *water-resistant* urea resin glues have been known and used for more than 10 years. However, the waterproof phenol glues are "hot press" glues, and the glue joints must be cured at temperatures of about 300°F while the work is clamped up. This operating characteristic limits their application to thin sheets of plywood (largely douglas fir) made in hot platen presses. The urea glues on the other hand, while they are room-temperature-setting, and thus much more widely usable, are *not* waterproof.

What has been accomplished then in processing resins to make the new glues has been successfully to effect in *one* glue a combination of the operating and performance characteristics already possessed separately by two older glues. The new resorcinol and resorcinol-phenol glues are room-temperature or intermediate-(warm)-temperature-setting *and* waterproof when set.

### COMPARE WITH PREVIOUS INNOVATIONS

Similarly, burning lime to make portland cement was but a step in processing the same basic material, lime, which had been used for centuries; and converting cast iron into structural steel was but a step in processing iron ore, neither constituting the invention of a "new" material. Yet architecture, structural engineering, and construction as we know them today rest on the new physical properties (performance characteristics) of *waterproofness* and *compressive strength* of portland cement and on the *shear* and *tensile strength* of structural steel.

These two decisive improvements in lime and iron ore were preceded by numberless fruitless experiments. Egg albumen and honey, for instance, were used as additives in exterior stucco plaster for American Colonial stone houses to impart moisture resistance to lime; the walls themselves were laid up and the interior walls scratch- and brown-coat plastered in ordinary clay, with lime white-coat finish inside.

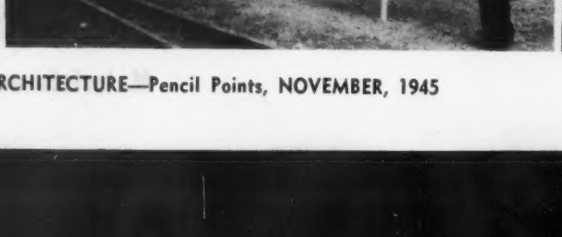
In the same way previous attempts had been made to "waterproof" the older gelatin animal, vegetable starch, protein casein, and urea resin glues. But none of these attempts produced a glue which was absolutely waterproof, or unquestionably as durable as the wood it bonded under all conditions of use such as exposure to moist and dry heat and fungus, or usable at low setting temperatures such as must be relied on in gluing heavy work too thick for the penetration of the heat necessary to cure the glue at the innermost glue line.

Without such a glue, wood, a basic structural material, has always been limited in its use in buildings to *sizes* available from the tree, to *positions* where solid natural timbers singly or assembled only with "spot" fastenings (nails, bolts, dowels, pins, etc.) could carry the stresses imposed, and to *shapes* which could be hewn or bent from the tree or sawn and scarfed together.

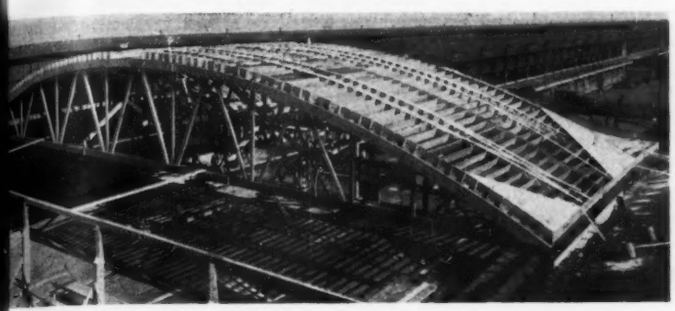
### NEW POTENTIALS WITH NEW GLUES

This lack of a perfect method of bonding wood fibers has not only held wood to subsidiary use in structural applications, but has severely limited its use even as trim and decoration. Now the low-temperature, strong, durable, waterproof, fungus-proof, heat-proof resorcinol-phenol resin glues have re-

Portland cement led to stronger mortar—an adhesive—and plain or reinforced concrete; steel led to skyscraper framing, welding makes possible continuity in framing; waterproof resin adhesives, by making possible re-assembly of small pieces or layers of wood, sawdust, etc., help rid wood of defects, make it a new material. Left, concrete; center, welded truss; right, making plywood.



and glued laminated arches and trusses.



moved this disabling limitation from wood; the only remaining limit is the ingenuity of the architectural and engineering professions.

These new resorcinol and resorcinol-phenol glues were invented during the war, their application has been strictly limited to war material, and knowledge of the very simple handling techniques required for their use has until now been confined to secret and restricted Government specifications. But their performance in war work is of undisputed record, and they are now freely available for civilian work along with completely developed and tested recommendations for their use in every conceivable wood-gluing application.

We now not only have glue as durable and long-lived as the most durable wood species, and as strong as the strongest, but preservative treatments have been perfected to make any structural wood durable; and these new glues will glue preservatively treated wood, or wood glued with these glues can subsequently be impregnated with preservative or fire-resistant treatment.

Additionally, the bad behavior of wood, which checks, splits, and cracks when it is used in large natural sizes, is automatically overcome by gluing, because when the tree is sliced into thin

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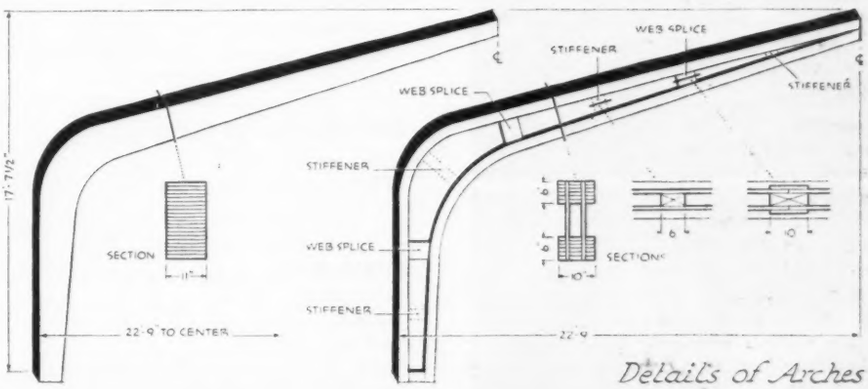
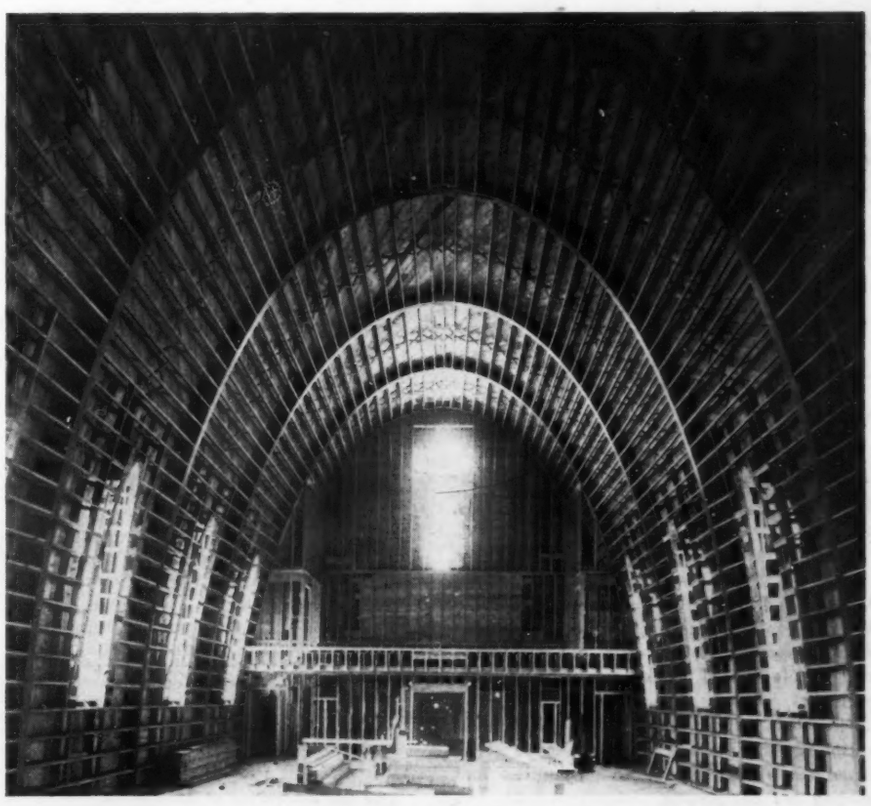
St. Austin's Catholic Church, Minneapolis
Bard and Vanderbilt, Architects

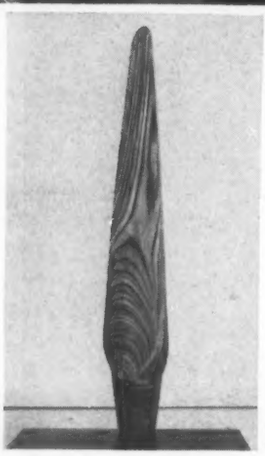
The wood church in Minneapolis, built nearly a decade ago, was apparently done in imitation of reinforced-concrete-parabolic-arch construction after a European example; wood arches were cheaper than concrete; the stucco exterior seems not entirely satisfactory. Yet the construction photograph is inspiring; the moral is obvious. Above it are typical solid and double-I section, casein-glued, laminated arches designed, built, and tested in the U. S. Forest Products Laboratory before waterproof resin glues were available; similar arches, made with better glue, have since been used in many types of buildings.

One achievement during this war was field testing of laminated wood construction—an achievement due in great measure to glue and other means of connecting timbers. Its value should not be lessened because a hurricane destroyed some hastily built laminated arch hangars; admittedly much wartime work was poorly executed with unsuitable lumber; that is not a design fault. Given better materials and workmanship, the hangars would probably not have suffered so severely. Glued lamination was no spontaneous development here. Otto Hetzer, a German designer, originated glued laminated construction before World War I. By 1939, as a result of certain peculiar combinations of circumstances, Hetzer's system was losing favor, in Europe, to mechanical jointing devices. In this country other conditions obtain; glued construction seems on the upgrade. We even have examples of plywood field-glued to wood framing.




Details of Arches





*Photos this page courtesy Bakelite Corp.*

**IMPREG and COMPREG: steps in manufacture. Top to bottom: thin, small wood sheets, already impregnated with resin, are laminated together; laminated blocks are built up into assemblies, hot-pressed together; single assembly is rough-shaped; after final shaping and machining, the finished propeller—made of a virtually new material, whose possibilities for building are challenging.**

boards and seasoned to exactly the desired moisture content, the stresses which cause splits, checks, and cracks are avoided.

Another important advantage of gluing is the fact that natural timber of large cross section containing defects (such as knots) so affecting its strength as to unsuit it for structural use (and hence less costly and more readily available than sound structural timber) can be sawn into thin boards, seasoned, and the boards reassembled with glue in a new arrangement without defects.

Architects and designers will find the exploration of glued wood design a rewarding field, and one in which accomplishment will be greatly facilitated by the large amount of groundwork which has already been done with the new glues during the war by Government design, procurement, and laboratory agencies, by contractors who fabricated war equipment using the glues, and by glue manufacturers. Information on all this groundwork is readily available.

## GLUE TYPES AND CHARACTERISTICS

### ANIMAL GLUE

Room-temperature setting (70°F).

**NO** moisture resistance. Poor heat resistance. Attacked by mold.

Quick setting.

High bond strength with poor joint fits and poor clamping pressure.

Used for non-waterproof furniture joint assembly gluing.

### VEGETABLE STARCH GLUES

Cold setting (40°F).

**NO** moisture resistance. Fair heat resistance. Attacked by mold. Fair bond strength with good clamping pressure.

Used for cheap non-waterproof furniture plywood and box shook manufacture.

### SEED MEAL BLEND GLUES

Cold setting (40°F).

**FAIR** moisture resistance. Fair heat resistance. Attacked by mold.

Good bond strength with good clamping pressure.

Used for moisture-resistant plywood manufacture.

### CASEIN GLUES

Cold setting (40°F).

**GOOD** moisture resistance. Excellent heat resistance. Preservatively treated grades are mold-resistant.

High bond strength with fair joint fits and clamping pressure.

Used for moisture-resistant plywood manufacture and assembly joint gluing.

### [1] THERMO-SETTING RESIN GLUES

### [2] UREA-FORMALDEHYDE RESIN GLUES

Room-temperature setting (70°F).

**HIGH** moisture resistance. Poor heat resistance. Moldproof.

Good bond strength with good joint fits and good clamping pressure. Used for highly moisture-resistant plywood manufacture and assembly joint gluing.

### PHENOL-FORMALDEHYDE RESIN GLUES

High-temperature setting (250°F).

**WATERPROOF.** Heatproof. Moldproof. Extremely durable.

High bond strength with good clamping pressure and proper curing (setting) temperature.

Used for "hot pressed" exterior, marine, aircraft, and furniture plywood manufacture.

### RESORCINOL-PHENOL-FORMALDEHYDE RESIN GLUES

Intermediate (warm)-temperature setting (150°F).

**WATERPROOF.** Heatproof. Moldproof. Extremely durable.

High bond strength with good clamping pressure and proper curing temperature.

Used for laminating heavy straight and curved waterproof marine and construction timbers, molded plywood, etc., warm-cured in heated chambers.

### RESORCINOL-FORMALDEHYDE RESIN GLUES

Room-temperature setting.

Excellent bond strength, **complete water resistance** with poor joint fits and poor clamping pressure on soft woods cured at room temperature. [Complete water resistance on hard woods cured at intermediate temperature (150°F).]

Used for waterproof assembly joint gluing on furniture, station wagon and truck bodies, aircraft, etc., "cold pressed" specialty curved and molded plywood, laminated timbers and shapes cured at room or intermediate temperatures.

[1] **Resin glues are classified (room-, intermediate-, or high-temperature setting) on the basis of the lowest temperature range in which they will cure to produce durable bonds. Being thermo-setting, the rate of cure is accelerated by the application of heat to the work while under clamping pressure, and room-temperature glues can be cured at intermediate temperatures and intermediate temperatures glued at (the lower range of) high temperatures.**

[2] **For lower glue cost, urea resin glues are sometimes "extended" by the user mixing wheat flour or other starchy "extender" with the glue. This detracts from water resistance and makes the glue line susceptible to mold attack.**

# ELECTRONIC HEATING

For over a century the principles of electronic heating have been known. The method has been used for heat treating industrial products for more than a quarter of a century; yet it has gained wide acceptance as an industrial tool only within very recent years. But so valuable has it proved in accelerating various manufacturing processes that it is today indispensable to industry.

This type of use is not very architectural. What are the potentialities of electronic heating as far as architecture is concerned?

### HEAT IN BUILDINGS?

Heat is required in buildings for three principal purposes: for space heating or cooling, air conditioning, etc.; for cooking food; and for heating water. For none of these is electronic heating suitable, at least in its present stage of development. At times the necessity of providing space and facilities for electronic heating equipment in manufacturing plants may become an architectural engineering concern.

It is true that at World's Fairs and occasional lectures we have seen eggs electronically fried. Cooking with electronic heat is a physical possibility, but it is neither economical nor productive of the golden brown roast, the delicately crusty biscuit, which means good cooking to the average human being. Dielectric heat, used for cooking, might be described as working from the inside out, just as corn is popped; which would be likely to produce roast beef brown on the inside and rare without, or muffins with crunchy centers and anemic outsides. As far as health, food values, etc., are concerned, the dielectrically cooked product might be entirely satisfactory, but it would hardly satisfy those of us who are accustomed to having our cooked food well done only on the surface.

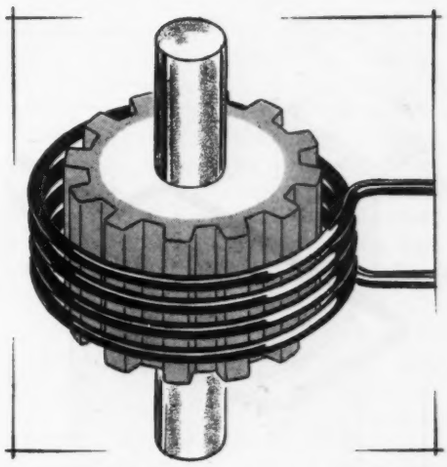
Another drawback: the high frequency current required would entail the installation of an oscillator or generator of some sort, which might cost (at present prices) from $1,500 to $2,000. The frequency would have to be extremely high for reasonable cooking operations; and both the capacity of such a generator and its size would be hard to accommodate in residential, if not in commercial or institutional, kitchens.

### HOW ELECTRONIC HEATING WORKS

To comprehend the reasons for such statements, some understanding of the nature of electronic heating is necessary. Briefly, electronically induced heat is the result of energy induced in a substance by the action of high frequency electric current. The heated substance may be a conductor of electricity, such as a ferrous or non-ferrous metal, or a non-conductor, such as a plastic, glass, wood, etc. If the heated substance (called, in industry, the **workpiece**) is a conductor, electronic heating may be termed **induction** heating. If it is not, it may be called **dielectric** heating. The word "electronic" is actually a misnomer, because it is identifiable primarily with the most common contemporary means of generating high frequency current, the electronic vacuum power tube, not with the heating process.

### INDUCTION HEATING

Induction heating usually requires that the workpiece be surrounded by one or more turns of an electrical conductor through which the high frequency current flows. Copper tubing, rather than wire, is often employed for this purpose because current travels on the surface of the conductor, and tubing has two exposed surfaces, wire only one. Heat is induced in the workpiece by electromagnetic



**Diagrammatic representation of induction heating, as used to surface-harden a gear.**

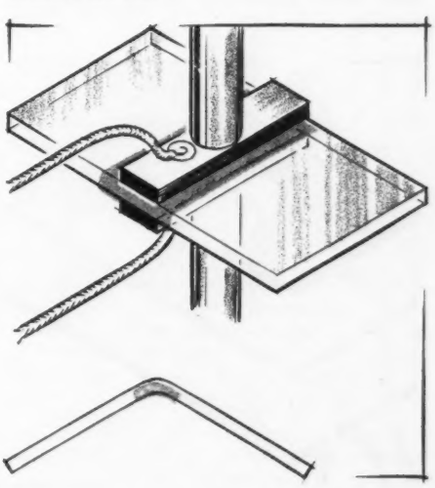
Electronic Heat is produced by high frequency current.

High frequency current is alternating current ranging from 60 to 300,000,000 cycles per second.

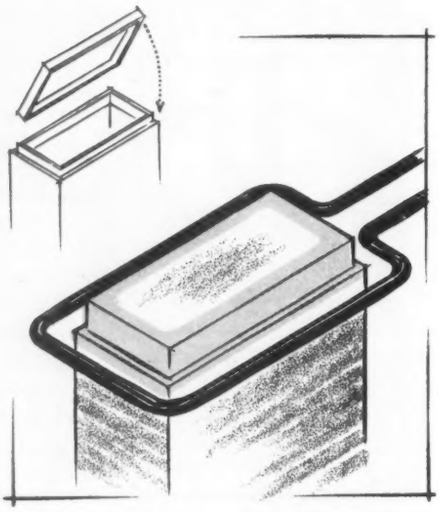
There are two types of electronic heating, the distinction depending on the electrical characteristics of the object heated:

INDUCTION HEATING, when the object heated is a conductor of electricity; and
DIELECTRIC HEATING, when the object is a non-conductor.

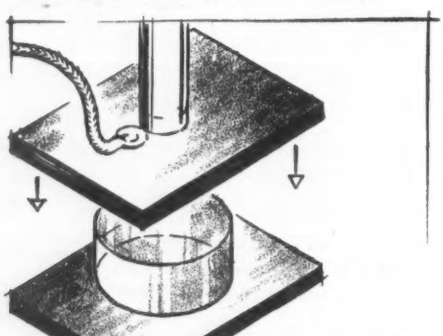
**Diagram illustrating dielectric heating, here applied to a plastic sheet to soften it for bending (below).**



## ELECTRONIC HEATING

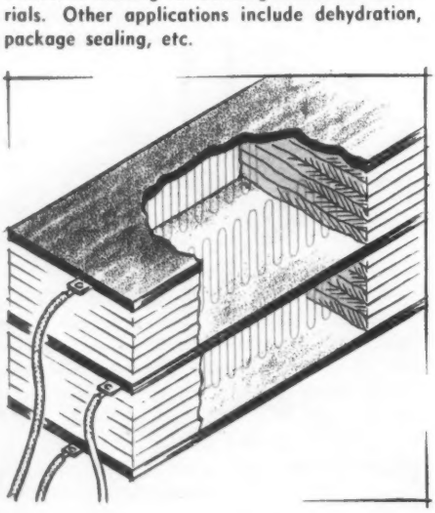


Induction heating for joining small parts, as sealing a box cover. Other uses: heating crucibles for melting metals, chemical or metallurgical analysis, etc.




Dielectric heating prior to forming under pressure (as with plastic objects) reduces time and degree of pressure, saves molds, minimizes waste.

Dielectric heating for bonding laminated materials. Other applications include dehydration, package sealing, etc.



action, and like electric current is concentrated in the outer surfaces, particularly those close to the coils; a phenomenon called **skin-effect.** The higher the frequency used, the more pronounced and instantaneous becomes the reaction; degree and depth of heating can thus be finely controlled. These characteristics make induction heating particularly suitable for such processes as surface-hardening of metal shapes.

### DIELECTRIC HEATING

In dielectric heating, the workpiece is heated electrostatically (rather than electromagnetically) by means of two or three plates which act much as do radio condensers. Molecular friction—and hence, heat—results from the application of high frequency current. Every molecule of the heated substance is equally affected, regardless of its location or distance from the plates. Consequently uniform heating is possible throughout the entire material regardless of its size or shape.

### USES, APPLICATIONS

The following list of uses, which is by no means complete, is constantly being augmented as new applications are devised to solve new production problems.

#### INDUCTION HEATING

**Ferrous Metals:** Hardening, annealing and heat treating, flowing tin on tinplate, baking finishes, pre-heating for welding, forging, spinning, extruding or upsetting and stress relief of welds or brazed joints, melting.

**Non-Ferrous Metals:** Brazing and soldering, annealing, melting and alloying, heat treating, degassing of tube electrodes, glass-to-metal seals, melting, welding.

**Processing:** Detonating explosive rivets; bombarding radio tubes.

#### DIELECTRIC HEATING

**Abrasive Materials:** Baking after pressing; baking under pressure, as applied to resin-bonded materials.

**Food Processing (industrial):** Sterilization, pasteurization, dehydration, deactivation of enzymes, cooking and heating, baking, curing, destroying infestations; packaging and sealing.

**Impregnated Sheet Materials:** Laminating of flat sheets, preheating of stacks of flat sheets, curing of molded shapes.

**Plastic Molded Materials:** Preheating of forms for compression and transfer molding; heating in molds.

**Rubber:** Curing of rubber, curing of foam rubber, drying, preheating molding compounds containing rubber.

**Sheet Plastics:** Cooking during manufacture, annealing and heat treating, heating for shaping, laminating of sheets, seam and edge joining.

**Textiles and Papers:** Drying rayon, heating nylon thread, drying cloth and paper, heating rayon to balance cord.

**Thin Materials:** Sealing containers, "sewing" thermoplastic sheets and fabrics impregnated or coated with thermoplastic materials.

**Wood:** Gluing, bonding, drying, seasoning.

### ADVANTAGES

For these purposes, electronic heating has certain definite advantages: Strikingly reduced processing time, which permits increased production at lower cost; simplicity of operation, which permits use of non-technical labor and results in greater uniformity of product and fewer rejections; fine control of extent, time, and degree of heating, which may be utilized to eliminate post-heating

corrective measures; and, as applied to industrial uses, lower costs (initial and operating) than are obtainable with other production methods, and cleaner, less space-consuming work stations with reduced fire hazard. In fact, without electronic heating many modern products could not be manufactured at a low enough cost to make mass production feasible.

For building equipment, however, electronic heating is still unsuitable. The fact remains that a bulky, expensive generator is required at present, and for operations on such a small scale as the ordinary domestic kitchen the cost and space are not justifiable. Perhaps future developments will include generators small and cheap enough to make possible a convenient, cheap, electronic kitchen range. Possibly some genius will find out how to build electronic plates into a wall, in order to convert the structural wall into a simple radiant heating panel. Neither suggestion can be called impossible or even improbable in the light of technological progress during the war.

But much more likely, although it has yet to be projected by those capable of producing and utilizing new techniques, would be the application of electronic heating to construction methods. In construction, there are countless joints to be made. Common methods of making joints include the mechanical means (bolts, rivets, screw joints, friction joints of all types); adhesives (mastics, putty, plastic glues, etc.); and physical or chemical union of the materials as in welding or soldering. To substitute electronic methods (of applying heat for making or reinforcing joints) for the handicraft methods now in vogue sounds revolutionary; but it is much more reasonable than to propose an electronic stove. The plumber, the welder, the plastics or plywood installer could distribute the cost of the equipment involved over many jobs; he could tac-weld his material in place and then proceed to making the finished joint; he could heat materials for bending to suit job conditions. Many other applications can be envisioned.

Yet, architecturally speaking, electronic heating is now a process for producing and preforming building materials—plywood, plastics, metalwork, built-up members, and the like. The development of smaller (though still large), efficient (though still costly), standardized generators presages the advent of portable equipment for field as well as factory use. When such a development occurs, construction will find a way to use it to advantage.

## BUILDING CODE PROGRESS

For years there has been agitation to modernize building regulations, and to achieve uniformity of regulation, at least within a geographic or political region. Antiquated codes have caused much waste of construction material and time; many of them have been regulations to evade (legally) rather than to live up to, because their provisions have been unreasonable in view of modern knowledge, materials, and techniques. Some may still contain provisions which, intentionally or unintentionally, favor some special interest; but much more serious is the variation in requirements from one locality to the next, so that in some cases a designer or builder has to change his practice completely upon entering a new community. Thus goes the argument for uniformity and modernization of building codes. During the war many localities adopted temporary regulations much less exacting than codes for normal times, and we learned a lot.

Also, both prior to and during the war several construction innovations were evolved; their use could not be covered by existing building regulations no matter how they were stretched. Two examples are glued construction and lightweight steel construction; there are several others. Several associations, societies, and industry groups are active in suggesting code provisions to remedy this situation.

The accepted purpose of a building code is the protection of people as a whole against a possible irresponsible individual designer, builder, or owner. Thus safety becomes the prime factor, safety against fire, panic, and structural hazard. To ensure safety minimum standards are set up by the code; the evil in this, of course, is that in practice the minimum becomes the maximum.

The following summary of regional codes may not include all states which have uniform building regulation, but it does reveal that the concept of uniformity has achieved surprisingly wide acceptance.

**WISCONSIN:** State code established 1911, administered by State Industrial Commission; changes made in consultation with Advisory Board; provisions have statutory force but are promulgated by Commission without legislative action. Code applies to new buildings, remodeling, additions, except 1 and 2-family dwellings and their outbuildings, outlying agricultural buildings, temporary construction. **Note:** Wisconsin has only 1 large city, Milwaukee, with a building dept. capable of passing on projects; otherwise projects are submitted to State Commission in Madison. Yet there is no interference in local matters; any political subdivision may enact more stringent regulations; State authorities deal primarily with safety standards.

**INDIANA:** Enabling act passed February 1945, establishing Administrative Building Council composed of state officials, architects, engineers, building contractors, building mechanics; director appointed by Governor, must be registered architect or engineer. Administrative Committee administers laws, promulgates and administers regulations. Its regulations have statutory force. Codes supersede all previous regulations, are based on Pacific Coast Uniform Building Code, are simplified by providing legal means of referring to recognized standards of quality; as far as possible it is on a **performance** rather than a **specification** basis; prepared by competent technicians, it is easy to revise, quite flexible. Application of code similar to that of Wisconsin.

**IOWA:** Business and professional societies related to building have prepared an enabling act to provide for a state regulatory body and code; act passed state senate last spring, did not come to vote in house; is being reintroduced this session.

**OHIO:** Has fairly complete state code.

**PENNSYLVANIA:** Fairly complete requirements for small cities; also detailed fire and panic regulations, promulgated by Dept. of Labor and Industry under legal authority.

**MASSACHUSETTS:** Has state requirements applicable in absence of local code; also state code for public assembly occupancies.

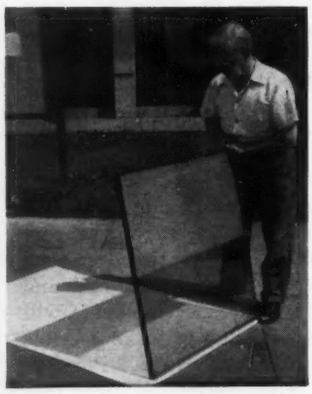
**N. CAROLINA, SO. CAROLINA, LOUISIANA:** Requirements somewhat limited.

**NEW JERSEY:** Has state School Building Code.

**CONNECTICUT, MISSOURI:** State codes being actively promoted.

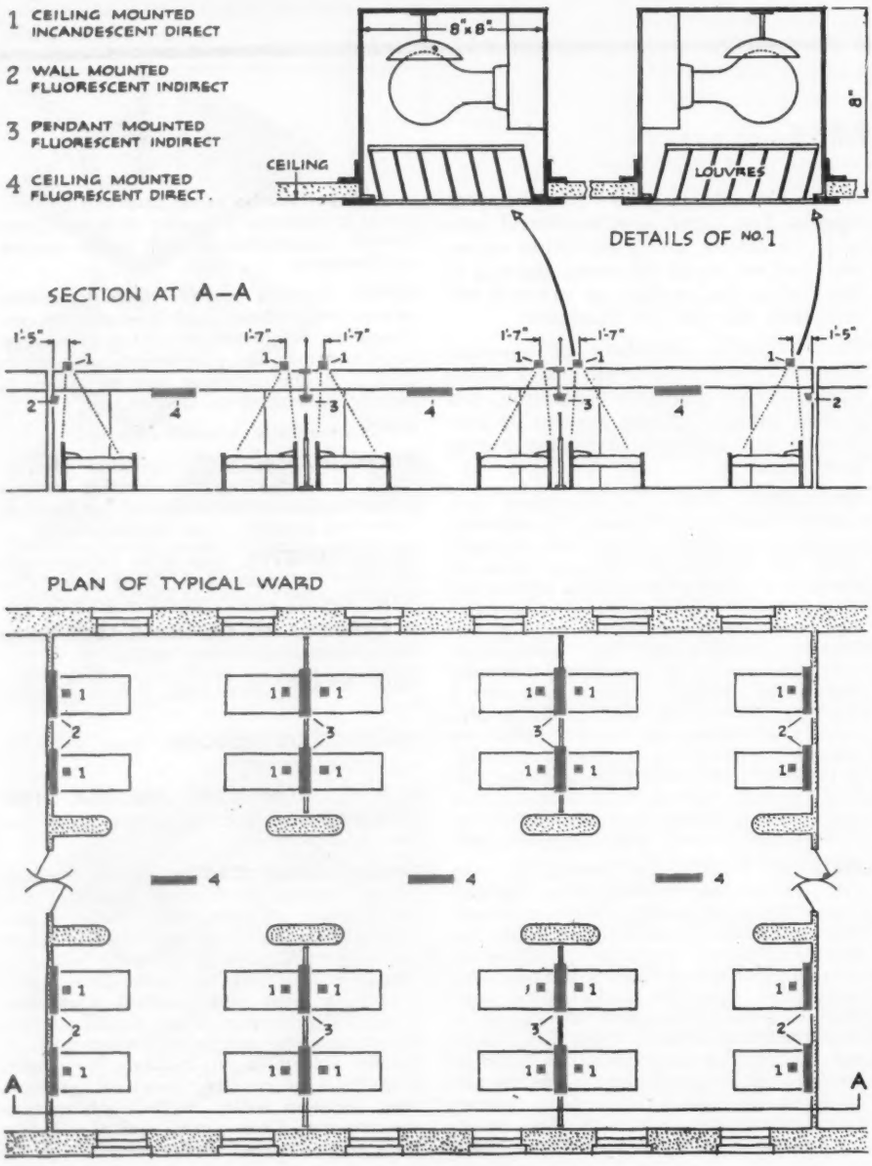
**ILLINOIS, NEW YORK, VIRGINIA, NEW HAMPSHIRE:** Preparation of state codes has been proposed.

**PACIFIC COAST STATES:** Uniform Building Code, prepared by Uniform Building Code Association, affiliated with Pacific Coast Building Officials' Conference (Conference established 1922) adopted by many localities, also by many outside the Pacific Coast region (total: 375 cities and counties). Objective: to provide a document which can be adopted by ordinance by any political subdivision, to obtain uniformity in building regulation throughout the country, to reduce insurance costs, increase safety, without raising construction cost. Code can be revised annually to change outmoded requirements.



## HEAT-ABSORBING DOUBLE GLAZING PROPOSED FOR SCHENLEY BUILDING

**Designer Woodie Garber's projected Schenley Building in Cincinnati, featured last month, was designed for heat-absorbing double glazing. These photos, showing effects of clear and sandblasted glass, arrived too late for inclusion with our presentation. At left, photo taken looking directly into July sun; right, shadows on a completely white piece of paper. Transparent glass throws a slightly darkened, glare-free shadow; sandblasted portion, a shadow as dark as that thrown by the man.**




## FURTHER RESEARCH IN HOSPITAL BED-LIGHTING

McDougall and Friedman, consulting engineers of Montreal, Canada, have been engaged in research on hospital lighting paralleling that reported by Isadore Rosenfield in our July issue.* We present here, digested from considerable correspondence between Mr. Rosenfield and Mr. D. W. Heywood of the Canadian firm, their experience.

Their first attempt was a wall-mounted fluorescent box fixture, located over the bed, with one lamp and reflector throwing light up and forward, another down and forward. The fixture had a ribbed glass front; each lamp was separately controlled. Results were only moderately satisfactory; fixtures collected dust; not enough light was thrown up; glass might break or lamps drop. Adding louvers, glass top cover, and another lamp for up-light helped; but still a patient sitting up in bed threw shadow where he needed light. The final design was the incandescent recessed ceiling light shown at the top of the drawing at left, which has since become available commercially.

Design of the ceiling fixture concentrates light in an area approximately 5 ft. in diameter, centered on the bed. The fixture does more than double the connected lighting load, but provides about 20 foot-candles at bed level; if need be, it can be surface mounted. Mr. Rosenfield finds the fixture particularly suitable for mental hospitals, although he does suggest that it is difficult to service because a stepladder is needed. The remainder of the drawing shows McDougall and Friedman's solutions of lighting problems for a recent job involving 24-bed wards.

* "Advances in Hospital Lighting Design," July 1945, page 84.

# Technical Books, Pamphlets, Magazine Articles

**Reviewed by Jean and David Aldrich**

**British Building Studies**
*Post War Building Studies Nos. 10, 11, 12, 13, & 14. Publ. for the Ministry of Public Works by H. M. Stationery Office, London, 1944. (Available from the British Information Services, 30 Rockefeller Plaza, N. Y. C.)*

**No. 10. Solid Fuel Installations.** *Committee convened by the British Coal Utilization Research Association. 48 pp., charts, appendices, index. 25 cents*

This is a wandering report on British solid fuel heating and cooking installations intended to achieve greater economy in postwar housing. Its use in this country is limited by the exclusion of any reference to central heating.

**No. 11. Electrical Installations.** *Committee convened by the Institute of Electrical Engineers. 96 pp., illus., appendix, index, bibliography. 45 cents*

As in other publications of this series, the reporting committee was charged with reviewing one section of the building world as part of a coordinated, comprehensive study for postwar building. In this case, the terms of reference were:

1. To review existing information and practice concerning installations in buildings for:
   a) the supply of electricity for all purposes
   b) electrical household appliances serving single family dwellings
   c) all forms of electrical tele-communications
2. To review proposals for improved electrical appliances for space heating, cooking, refrigeration, hot water supply, dish washing, and clothes washing.
3. To make recommendations for practice in postwar building.

For the accomplishment of these terms, the committee studied the following subdivisions of the subject: electricity in houses, apartments, multi-family buildings, schools, hospitals, and farms, and the ownership and control of electricity service cables in apartments and multi-occupied buildings. The recommendations of the committee embody suggestions for improvements, general and technical, for the anticipation of required services and for the design and installation of electrical wiring and appliances.

Their general discussions of the subdivisions have been summarized in an appendix listing the recommendations under the headings of the main subdivision. The special requirements of certain types of buildings are also listed in the appendix.

**No. 12. The Lighting of Buildings.** *Lighting Committee of the Building Research Board of the Dept. of Scientific and Industrial Research. 163 pp., index, appendices, illus., tables, charts. 75 cents*

In no way intended as an electrical text, this pamphlet should serve as a guide and conscience for architects, engineers, manufacturers, and others who will participate in the direction, organization, and production of buildings after the war.

Written under terms of reference similar to other studies of the series, the subject matter of this long report has been divided into seven sections. The report opens with a qualitative discussion of the principles of lighting and vision, discriminating between those factors in lighting which can be measured (quantity, brightness, etc.) and the subtler factors such as light distribution and contrasts. The latter considered here.

Part II of the report explains the method of measurement recommended for appraising lighting, both natural and artificial. The design and siting of buildings for optimum daylighting and sunlighting, of both grounds and interiors, are far less established than the methods and principles of artificial lighting, therefore are dealt with in considerable detail here.

The consideration given building heights and location provide important data for town planning. This very useful discussion is well supported by diagrams and tables.

Detailed, precise standards of natural and artificial lighting are put forward in the sections on lighting in dwellings and schools. The principles expounded in Parts I and II are utilized to insure optimum lighting for all the varied functions of home and school. Appendices present graphical, tabular, and mathematical methods of finding daylight sunlight design. Window design is based on elaborate research into the effects of size, location, shape, obstructions, and other factors, and simplified for practical use.

The results of a survey of householders on dwelling lighting and tabulated estimates of improved standards are included among the appendices.

**No. 13. Non-Ferrous Metals.** *Committee convened by the British Non-Ferrous Metals Research Association. 72 pp., index, appendix, tables, bibliography, glossary. 30 cents*

The reporting committee reviewed practice in the use of non-ferrous metals in building construction with particular reference to the most suitable application of the metals involved and to the purpose for which they may be used. The pamphlet sets forth recommendations based on the committee's study for the use of non-ferrous metals and stainless steel in postwar building and for further research.

Technical suitability is the criterion of recommendation rather than consideration of cost, availability, esthetics, and other factors.

The following are the chief metals and alloys with which the committee was concerned:

Aluminum and its alloys.
Copper, brass, bronze, gun metal.
Lead and its alloys.
Magnesium and its alloys.
Nickel, Monel, nickel silver, etc.
Stainless steel.
Zinc and its alloys (including galvanized iron and steel).

The report is in three parts. Part I deals with the general properties of metals and alloys as they affect use in building, commencing with notes which give a brief outline of the general char-

## from the Technical Press

acteristics of the alloys. The observations on various types of decorative and protective finish are of considerable value to architects.

Part II discusses the application of the metals to various uses in building—piping and related appliances, structural, insulating, and water excluding uses.

Part III outlines the committee's recommendation for revision of present practice and for further investigation.

Details of the metals and alloys, together with relevant specifications, are given in Appendix I. Other appendices tabulate physical properties of some of the metals and discuss briefly the design of aluminum structures.

**No. 14. Sound Insulation and Acoustics.** *Acoustics Committee of the Building Research Board of Scientific and Industrial Research. 80 pp., illus., append., index, and bibliography. 30 cents*

The three topics covered by the report are sound insulation (town planning, site development, structural measures); acoustics of auditoriums; and proposals for future research.

Part I discusses sound insulation under two headings; the exclusion of outdoor noise and the transmission of sound inside buildings. In each case typical noise sources and their loudness are first treated, then the methods of transmission and insulation and, finally, the desirable standards of quiet. Numerical values are given in most cases, accompanied by a word of caution from the committee as to their exactness.

Part II is devoted to room shapes and the use of sound absorbents. Specific problems are examined to illustrate the discussion.

Both Parts I and II are liberally supplied with charts, structural and arrangement details, and diagrams and tables in support of the text. The findings of the committee are outlined in a summary of standards and treatment recommendations for sound insulation and acoustics for the principal types of building use.

This section is reinforced by appendices on plumbing noises, sound transmission through timber and concrete floors, graphical analysis of reflection in auditoriums, measurement of sound absorption and insulation, and reduction of noise through open windows.

### PAMPHLETS

**Conference Report on New Developments in Wood Products.** *Bulletin, N. Y. State College of Forestry, Oct. 1944. Paper bound, 144 pp., illus.*

In these thirteen papers describing recent innovations in the treatment and use of wood, glued laminated products receive primary attention. The description of new glues, high frequency heating methods, utilization of laminates for marine products and timber structures show how technical advances and discoveries have enabled wood products to supplant traditional materials in a wide variety of manufactures and constructions. New processes of impregnating wood to produce "transmuted" and fire-retardant materials are elaborated to show improved characteristics and expanded uses. The efficiency and uses of cellulose and lignin plastics have been increased.

**Recommended Practice for the Design of Concrete Mixes.** *A.C.I. Standard (ACI-613-44). Paper bound, 23 pp., tables, charts, appendix, bibliography. American Concrete Institute, Detroit. 50 cents.*

The American Concrete Institute has determined that the most practical procedure for deciding the final proportions of concrete for a given purpose is actual trial and adjustment on the job. To this end the Institute has set forth, in this standard, recommendations for the selection of a trial mix, for starting concrete operations that will require least adjustment on the job.

Six steps are suggested for the determination of a trial mix for initial field use:

a) Select the water cement ratio

b) Select the limits of slump

c) Determine the largest suitable size of aggregate

d) Estimate the minimum percentage of sand providing the proper degree of workability

e) Estimate the amount of water per cubic yard of concrete required for steps **b**, **c**, and **d**

f) Compute the trial mix proportions that conform with steps **a** to **e**. Make such adjustments in the trial mix as may be necessary

Tables of supporting data for the principal types of concrete work make steps **a** through **e** easy to complete. Step **f** is simplified by an illustrative problem in the text.

An appendix discusses the laboratory tests required for determining the characteristics of the materials available for the job. Printed standards recommended for use in the laboratory tests are listed for each material. The *nomographic chart* is provided and its use as a short cut in trial mix design and adjustment is illustrated by sample problems. A table of rules and increments for mix adjustments is explained as an alternative to the use of charts and computations.

### MAGAZINES

**Interim Report on Elementary Schools;** *Report to the Minister of Education for Ontario, published in the Journal, Royal Architectural Institute of Canada, September 1945.*

The Committee who prepared this comprehensive report favors one-story buildings as being "of easy extension, greater flexibility of arrangement, speedy construction, and easy demolition when the school has outlived its usefulness." This last phrase reads almost like heresy; we are accustomed here to the school building eternal; but how logical, how heartening it must be to teachers to have in prospect buildings that will keep up to date.

The Committee has not set up standard school buildings, but has designed typical classrooms, suggesting their use as standard units of future buildings, and plans to undertake a practical experiment at Port Sydney, Ontario. It recommends the early appointment of an architect so that his talents may be fully employed in every phase of the building program, including site selection. Appendices contain data on lighting, heating, and ventilation. The 3 standard classrooms are all bilaterally lighted with clerestories.

**Scheme for Rebuilding England's House of Commons;** *address by Adrian Gilbert Scott, M. C., F.R.I.B.A., before the Town and Country Planning Association, London, Aug. 30, 1945, on work which he and others are performing for the House's Select Committee on Rebuilding. From the Architects' Journal, Sept. 27, 1945.*

Apparently the new British House of Commons is to contain within its tradition-inspired carcase all the up-to-date mechanisms contemporary engineering ingenuity can devise. Mr. Scott, in his illuminating report, seems wryly aware of the difficulties involved. As a matter of fact, seldom have we

come across a report on technical matters that could be so hilariously interpreted.

In such a routine matter as seating, for instance, the new House is to have a total of 939 seats, made up of 437 Members' seats, 326 strangers' (visitors), 161 reporters', and 15 officials'—in all, an increase of 137 seats over the old provisions. Yet the number is insufficient, from any logical point of view; there are 640 Members to occupy the 437 seats provided for them. This caused much discussion until it was discovered that 67 less Members' seats used to accommodate 670 Members (when the Irish attended). Here logic bows out.

One provision which might have caused difficulty was the requirement for office space in addition to the Chamber for Members and Officials. Fortunately, there existed some heavy brick vaults under the lobbies, originally included for a ventilation scheme which never materialized, which, by means of artificial lighting and air conditioning, can be converted to such presumably useful purposes. In addition, the use of a steel frame and thinner walls, plus omission of some light wells which had never been large enough to serve their purpose anyway, and utilization of other space, made possible the provision of 10,000 more sq. ft. of space for reporters' and other offices—nearly double the previous allotment.

As to construction, the Palace was supposed to rest on a 10-ft. thick floating concrete mat. Actually, test borings disclosed a 6-ft. "raft" of lime concrete under the structure only, not including courtyards. However, the new building will be lighter due to steel framing, and the existing mat, modified to take concentrated point loadings, will be satisfactory.

The acoustics of the new chamber caused all sorts of difficulties. It was eventually decided to install sound amplification, with 456 loudspeakers, one for every two persons, and all these (to quote Mr. Scott) . . . "have to be incorporated inconspicuously in the seating and made proof against damage by Members, who are reported to be in the habit of dismantling anything within reach during a dull debate, leaving a heap of screws and other components on the floor. They are also confirmed Doodlers in telephone boxes, and we have been to some pains to evolve an acoustic surface proof against this and think we have discovered something which will annoy them very much.

"No provision is being made for either public broadcasting or television, though every other known service is being installed, including annunciators, division bells, electric clocks, pneumatic tubes, vacuum cleaning, in addition to all types of heating and air-conditioning to every room and telephone box, so that the building is developing into one mass of ducts and conduits all of which have to be discreetly hidden."

Mr. Scott also says: "As satisfactory ventilation was of the utmost importance, Dr. Oscar Faber was asked to prepare a scheme. The chief problem, as in a theater, was not the heating, but the cooling, of the Chamber and the elimination of hot air. But unlike a theater, the audience is liable to violent fluctuations without notice, necessitating correspondingly quick adjustments of the ventilation so that this should, as it were, follow the Members about to the Division or Commons Lobbies. To enable this to be done, it is proposed to install a periscope in the Chamber ceiling, so that the control engineer may observe any large movements and immediately adjust the ventilation.

"Each occupant of the Chamber will be provided with a heating panel under his feet and a gentle current of air from varying directions around his head, the air being introduced horizontally above head-level and extracted mainly at the ceiling of the Chamber. Air-conditioning, with humidification and cleaning by electric filtration, including the telephone boxes, involves extensive plant-chambers and an elaborate system of ducts.

"In the old chamber the air was introduced vertically through an iron-grilled floor covered with carpet, which resulted in the undesirable condition for Members of Parliament of 'hot head and cold feet'—this we hope to reverse."

Admitting he has been warned that working for Parliament usually leads to the asylum or the grave, Mr. Scott winds up by prophesying that delays from whatever causes—including Parliamentary procedure—will of course be blamed on the architects.

## BOOKS

**The Natural Lighting of Houses and Flats, with Graded Daylight Factor Tables.** *T. Smith and E. D. Brown. H. M. Stationery Office, 4d. (from review in the Architect's Journal, July 14, 1945), published by the Architectural Press, Surrey, Eng.*

This book sets forth the elementary daylight requirements of buildings and a new method of daylight design based on standard tables of window performance. The tables, which form the major part of the document, give values for 3 daylight factors under differing degrees of obstruction for window sizes up to 6′ x 8′ in three terms:

a) Penetration of a given daylight factor value.

b) Spread of daylight factor value to either side.

c) Area covered on the working plane of the room.

The method of using the tables is clearly described so as to render easy the selection of a window size to provide a specified minimum of daylight.

**Engineering Contracts and Specifications** *by Robert W. Abbett, A.S.C.E., John Wiley & Sons, Inc., 440 Fourth Ave., New York, 1945. 188 pp., illus. with examples, tables, graphs; bibliography; index. $2.25*

Although it is written primarily for those interested in engineering construction, and is based in great part on government contract procedure, this volume should interest all who participate in drawing up specifications and contracts for any type of construction. The author taught a course on the subject in the School of Engineering, Columbia University; and a mimeographed text of the volume was used in war training classes at George Washington University in 1943 and 1944. Most of the material is based on extensive experience in construction management before and during the war.

Subjects covered include discussions of the types and purposes of contracts; legal considerations; bidding procedures; complete analysis of specific types of construction contracts; bonding, arbitration, claims; analyses of contracts for architectural and engineering services; and specification writing.

Only in one respect does the volume seem unhappy: in the amount of space, and in the position, allocated to the subject of specifications. This most important phase of design and construction occupies one chapter out of ten, the last. As a matter of fact, it is common knowledge that an ironclad building contract can be evaded if the specifications are faulty. Aside from this, it is noteworthy that the author, an engineer, is in truth arguing for simple good usage of the English language when he demands brevity, clarity, and precision in specification writing. He has found that such specifications, like good, clean architecture, pay dividends.

# MATERIALS and METHODS

### Adhesives

**1-23.** *Miracle Adhesives and Plastic Coatings*, Miracle Adhesives Corp. Reviewed October.

### Air Cleaners

**1-27.** *The Magic of Electronics in Air Filtration (Form 255)*, American Air Filter Co., Inc. Reviewed October.

### Concrete

**3-42.** "Featherweight" concrete roof slabs, Federal Cement Tile Co. Reviewed October.

**3-41.** *Fireproofing Structural Steel with Zonolite Water Repellent Concrete*, Universal Zonolite Insulation Co. Reviewed October.

### Doors and Door Equipment

**4-32.** 12-p. illus. catalog on aircraft hangar doors; movable steel partitions; crane entrance, industrial, garage doors. Section elevation drawings, specifications, application and performance data. Byrne Doors, Inc.

**4-31.** *Kinnear Rolling Doors, AIA File 16-D-13 (Bulletin No. 41)*, 38-p. illus. catalog on steel and wood doors—service, fire and window shutter, sectional overhead, bifolding, metal grille, special types. Auxiliary equipment, construction details, installation types and clearances, operating methods, specifications, special applications. Kinnear Mfg. Co.

**4-30.** *Rezo Flush Doors, A.I.A. File 19-E-12*, Paine Lumber Co. Reviewed October.

**4-33.** *Roddiscraft*, 4-p. illus. bulletin on a prefabricated factory-finished door unit, ready for installation. Specifications for interior assembled door jambs, casings, and stops. Roddis Lumber & Veneer Co.

### Electrical Wiring and Equipment

**5-21.** *Wiring Is the Key to Modern Homemaking*, 2-p. "planning guide and reference chart for electrical operating facilities in the home of today and tomorrow." Advice on wire size, minimum number of outlets, fixed lighting, switches for general purpose, appliance, individual circuits. National Adequate Wiring Bureau.

**5-20.** *Multi-Breaker Service and Load Centers (Cir. 323)*, Trumbull Electric Mfg. Co. Reviewed October.

Trumbull Electric Mfg. Co., 4 illus. circulars on flexible units for switchboard mounting; compact panelboards for circuit breaker protection; "dead front" convertible panelboards for power and light distribution; compact "dead front fuse-puller" switches with knockouts for all requirements. Construction details, dimensions, specifications:

**5-22.** *"Swing-Wa" Dead-Front Switchboards (Cir. 324).*

**5-23.** *Trumbull Multi-Breaker Panelboards (Cir. 309).*

**5-24.** *Trumbull Converti-Fuse Panelboards (Cir 306).*

**5-25.** *"Fuse-Puller" Switches (Cir. 311).*

### Finishes

**6-41.** *Hydrated Lime for Plaster*, The Finishing Lime Association of Ohio. Reviewed October.

### Fireplaces and Equipment

**6-42.** *Donley Dampers*, illus. folder (6¼x10½) on rotary, poker, and chain control dampers (stove plate iron) for fireplaces. Donley Brothers Co.

### Floors—Coverings and Maintenance

**6-43.** *Servicised Products*, 15 pp., illus. Asphalt plank for bridges, industrial flooring, roof decks; expansion joints of asphalt, sponge and cork rubber, fiber; asphalt or rubber specialties (cable trunking, capping, wall copings, rail filler, raggle block, flashings, etc.); rubber tile flooring. Servicised Products Corp.

**6-44.** *Sonneborn's Floorlife Cleaner*, 4-p. illus. folder on a floor cleaner that waxes as it cleans. L. Sonneborn Sons, Inc., Building Products Division.

**6-32.** 2 illustrated bulletins on industrial floor maintenance machines—wire brush type for picking up dirt, grease, metal cuttings, etc., and steel wool type for cleaning surface. Specifications, parts for sanding, dry brush cleanings. G. H. Tennant Co.

### Gypsum and Gypsum Products

**7-33.** 6-p. illus. folder on gypsum exterior gypsum board, "Bestwall," and "Certain-teed" gypsum laminated roof decking for wood frame buildings. General specifications, technical data, construction details, application instructions. Certain-teed Products Corp.

**7-32.** *Sound-Absorbing Gypsum Plaster, AIA 39-B*, 4-p. illus. folder on advantages of gypsum acoustical plaster as a noise-conditioner. Gypsum Association.

### Hardware

**8-54.** *Finishing Hardware at a Glance (17b/1)*, Lockwood Hardware Mfg. Co. Reviewed October.

### Heating and Heating Equipment

**8-55.** *Aerofin Standardized Heating Surface, AIA File 30c4 (Bulletin H-39-1)*, Aerofin Corp. Reviewed October.

**8-57.** *Vacuum Return Units (Bulletin 100-A) AIA File 30C5*, Ames Hydrovac Corp. Reviewed October.

**8-58.** *Town of Tomorrow (SA-3356)*, Bryant Heater Co. Reviewed October.

**8-59.** *Specification Data, Light Oil-Fired Series (HSD-53)*, 4-p. illus. folder on specifications for light-duty, direct-fired heaters (650,000 to 850,000 Btu). Rating and dimension tables, diagram. Dravo Corp.

**8-60.** *Specification Data, Heavy Oil-Fired Series (HSD-52)*, 4-p. illus. folder on specifications for heavy-duty direct-fired heaters (1,300,000-1,650,000 Btu). Rating and dimension tables, diagram. Dravo Corp.

**8-61.** *Engineering Standards for the Use of Contractors, Engineers, Architects, Salesmen (1942 ed.)*, Gar Wood Industries, Inc. Reviewed October.

**8-62.** *B-60 All Gas Control System Service and Instruction Manual (F1-101)*, 42 pp., illus. Manual on automatic control system and parts for gas-fired heating systems (direct gas valve operation in conjunction with remote room thermostat). General instructions on installation, maintenance, repairs, etc. General Controls Co.

**8-63.** *Hoffman Hot Water Controlled Heat*, Hoffman Specialty Co. Reviewed October.

**8-66.** *The New Hoffman Comfort Package, AIA File 30-C*, 2-p. illus. bulletin on a continuously circulated hot water heating system, thermostat-controlled, adaptable to zoning. Hoffman Specialty Co.

**8-65.** *Plan to Be Comfortable (Form 477)*, 24-p. illus. booklet (6x9), to guide home owners in selecting heating systems—from aircraft type heaters and solar radiation to central heating. Descriptions of typical boilers and heat distributing units. The National Radiator Co.

**8-55.** *Choosing a Heating Plant Wisely*, Plumbing and Heating Industries Bureau. Reviewed October.

**8-64.** *Bulletin B-3000 (steel boilers)*, Titusville Iron Works Co. Reviewed October.

### Insulation

**9-36.** *Industrial Insulation*, Baldwin-Hill Co. Reviewed October.

**9-37.** *Facts About Fiberglas for Design Engineers (G44-1)* 8-p. illus. booklet on Fiberglas for insulation (heat, sound, electrical); for heat-, damp-, and decay-proof fabrics; for air cleaning or conditioning; as plastic reinforcement; for rectification, fractionation, or absorption processes. Forms and sizes, properties. Owens-Corning Fiberglas Corp.

### Kitchen Equipment

**11-03.** *Portfolio of Personalized Kitchen Plans*, Edison General Electric Appliance Co., Inc., Hotpoint Kitchen Planning Division. Reviewed October.

**11-04.** *Kitchen Beauty Styled by Lyon*, Lyon Metal Products, Inc. Reviewed October.

### Lighting and Lighting Equipment

**12-38.** *Lighting Data on Flur-O-Guide Lenses and Panels, AIA File 31-F-237.* Illus. Data on lens panels for fluorescent, and "Lenslites" for incandescent, lighting. Suggested specifications, details, diagrams, candlepower charts, lighting guides for luminaires; lamp shields. Corning Glass Works, Lighting Division.

**12-47.** *Bulletin 10-B, AIA File 31-F-2*, 8-p., illus. bulletin on open and shielded type fluorescent light units. Data on continuous installations; table of foot-candle intensities. Day-Brite Lighting, Inc.

**12-48.** *Bulletin 30-C, AIA File 31F-2*, 2-p. illus. bulletin on hangers for all-chain suspension industrial fluorescent light units, and adapter strap for 4" concrete outlet boxes. Day-Brite Lighting, Inc.

**12-51.** *Mercury Lamps (Folder H)*, illus. folder on operating characteristics and applications of sun, black light, general, and germicidal mercury lamps. Life rates, transformer and spectral data—

UV and light output, chart of transmission curves of various glasses. General Electric Co., Engineering Division.

12-50. *General Electric Lamps (Y495)*, 4-p. illus. pamphlet on "the more widely used" G-E lamps—wattages, uses, etc. General Electric Co., Lamp Dept.

From "Lighting Idea Stimulators" series of booklets published by General Electric Co., Lamp Dept. Designs, suggestions, and detailed drawings by architects of various lighting arrangements:

12-39. *Lighting Goes Dramatic for the Postwar Department Store (Y475).*

12-41. *Light to Build Customer Traffic (Y479) (stores).*

12-35. *Modernize with Light (Y543) (offices, buildings).*

12-36. *Lighting Completely Planned (Y481) (residential).*

12-42. *Lighting Menu for Tomorrow's Restaurant (Y544).*

12-43. *Selling Staged with Light for the Postwar Flower Shop (Y545).*

12-49. *Folders No. 780 to 783*, 4 illus. folders. Aids in designing fluorescent illumination layouts for classrooms; shielded, direct and luminous, indirect. Data on air disinfecting. Edwin F. Guth Co.

12-33. *Hospital Lighting Data Book (Cat. 41), AIA F31-F-2 and 31-F-28*, Edwin F. Guth Co. Reviewed October.

12-34. *Lighting Drafting Rooms*, Holophane Co., Inc. Reviewed October.

12-44. *Catalog Section No. 11-44*, 8 pp., illus. Data on "Grenadier" lamp designs for commercial fluorescent lighting. Dimensions, photometric performance, layout designs, table of lamp lumens computation. F. W. Wakefield Brass Co.

Westinghouse Electric & Mfg. Co., Lamp Division:

12-45. *Fluorescent Progress*, 22 pp., illus. Report on manufacture and use of fluorescent lamps since 1938; data on phosphor powder linings; physical and electrical characteristics.

12-46. *Latest Engineering Data on Slimline Fluorescent Lamps*, illus. Uses of new slender fluorescent lamp for stores, showcases, architectural and decorative effects; wiring diagram.

**Maintenance**

13-12. *Waterproofing and Dampproofing Products (9/6)*, 4-p. illus. folder on waterproofing fabrics, felts, asphalts, primers, mastics, etc. Processes, recommended uses, specifications, diagrams. The Flintkote Co.

13-13. *Cemcoat Filler and Dustproofer (P-1762)*, illus. folder presenting planned system for painting cement floors of industrial and commercial buildings both for appearance and for maintenance. L. Sonneborn Sons, Inc.

**Marble**

13-11. *Marble in the Home*, Vermont Marble Co. Reviewed October.

**Paints and Coatings**

16-52. *Red Lead for Structural Work*, Lead Industries Assn. Reviewed October.

16-62. *Eye Comfort-Color Harmony, AIA Files 25-B-2, 25-D-5*, 4-p. bulletins on use of color for eye-strain relief and worker morale in industrial plants; on maintenance coating products. Specifications. Truscon Laboratories, Inc.

**Partitions**

16-61. *Fairhurst Unitfold Partitions, Disappearing Door Wardrobes, AIA-19-E-61, AIA-28-B-33*, International Steel Co. Reviewed October.

**Paving Materials and Treatments**

16-63. *Surfacing with Tarmac*, 16 pp., illus. 14 types of paving; application methods; tables on "Tarmac" and standard road tar designations, temperatures, uses, recommended aggregate graduation, road repairs. Data on prime coating, drag leveling course, mulch treatment, road mixes, retreatments, seal coats, penetration macadam, hot-lay tar concrete. Koppers Co., Inc., Tar and Chemical Division.

**Piping**

16-64. *1942 General Catalog*, 60 pp., illus. Welded wrought iron pipe; tubular products. Data on wrought iron and steel, product specifications; list of technical publications on corrosion problems; notes on mill standards; sizes, dimensions, weights; recommended installations; tolerances; trade customs. A. M. Byers Co.

16-59. *Acid-Proof Pipe and Fittings (Bulletin 550)*, U. S. Stoneware Co. Reviewed October.

**Plastics**

16-54. *A Handbook for Retailers*, 55-p. illus. bulletin (9x12) published by The Bulletin of the Nat'l. Retail Dry Goods Assn. in cooperation with the Society of the Plastics Industry. Material on progress in plastics, background information on plastics for retailers; guide chart for consumers; a capsule encyclopedia on plastics.

**Plumbing and Plumbing Equipment**

16-60. *Grease Interception, Manual AIA File 29c4*, Josam Mfg. Co. Reviewed October.

16-57. *What You Should Know About Plumbing*, Plumbing and Heating Industries Bureau. Reviewed October.

**Pumps**

16-58. *Facts You Should Know About Centrifugal Pumps and Impellers*, The Deming Co. Reviewed October.

**Steel**

19-35. *Airtherm Steel Deck for Roofs, Walls, Partitions*, Airtherm Mfg. Co. Reviewed October.

**Store Fronts—Marble**

19-37. *Modernize with Marble, AIA File 8-B1*, 8-p. illus. booklet. Photos and detail drawings of actual remodeled store fronts, using a marble veneer. Data on selection, finishes, thickness, joints, anchors, support, flashing, etc. Vermont Marble Co.

**Toilet Equipment—Marble**

20-19. *Marble Toilet Units, AIA File 22-A-3*, Vermont Marble Co. Reviewed October.

**Water Heaters**

23-42. *Catalog TW-95d, AIA File 29D2*, Kewanee Boiler Corp. Reviewed October.

**Windows**

23-37. *Designers' Reference (G.C.45S)*, 24-p. illus. catalog supplement on types and sizes of new modular metal windows and doors. Excellent presentation showing how to detail and install metal windows and doors in accordance with modular design principles. William Bayley Co.

23-43. *Bayley Windows-Doors-Operators in New Modular Sizes, AIA File 16-a*, William Bayley Co. Reviewed October.

23-38. *Book of Windows for Public Buildings*, Mesker Brothers. Reviewed October.

23-44. *Installation Details for Modular Windows*, 4-p. folder on solid-section steel and wood double-hung windows, supplementing and superseding those shown in the article, "Modular Planning as Related to Building Design." Modular Service Assn.

**Wood and Wood Preservatives**

23-41. *New Jobs in Our Town (timber truss construction)*, Timber Engineering Co. Reviewed October.

*Pencil Points, 330 West 42nd St., New York 18, N. Y.*
I should like a copy of each piece of Manufacturers' Literature listed.
*We request students to send their inquiries directly to the manufacturers.*

| NO. | NO. | NO. | NO. |
|---|---|---|---|
| NO. | NO. | NO. | NO. |
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NAME POSITION

FIRM

MAILING ADDRESS ☐ HOME ☐ BUSINESS

CITY STATE

PLEASE PRINT. 11/45

# MATERIALS and METHODS

## NEW PRODUCTS

### ADHESIVES

**Cordo-Bond 250.** Synthetic adhesive for lightweight combinations and laminations of wood, metals, and plastics. High resistance to water, oil, weathering conditions. Cordo Chemical Co., 34 Smith St., Norwalk, Conn.

**Penacolite G-1215.** Resorcin-based adhesive for bonding wood, fabrics, leather, rubber, plastics, etc.; room temperature setting. Strengths to 4800 psi. Pennsylvania Coal Products Co., Petrolia, Pa.

### COMMUNICATION AND SIGNALING SYSTEMS

**HP-16 X-Tra Talk-A-Phone.** Intercom units with paging facilities (independent of switchboard). Talk-A-Phone Manufacturing Co., 1512 S. Pulaski Road, Chicago 23, Ill.

### CONNECTORS

**Tornado Timber Connectors.** For secondary connections in all timber structures, particularly for live loads. Ankortite Products, Inc., 14th & Chestnut Sts., Kansas City, Mo.

### DRAFTING ROOM EQUIPMENT

**Drawing Board.** Adjustable. Engineering Mfg. Co., Sheboygan, Wis.

**Precision Micro Scale.** Equipped with sliding magnifier, 6" stainless rule, height-depth gauge; vest pocket size. Leonard Engineering Co., Silver Spring, Md.

**Templar Pencil.** Colored, indelible, strong. Reliance Pencil Corp., Mount Vernon, N. Y.

### FABRICS

**Texacote G.** Plastic-coated fabric, flame-mildew resistant, washable. Pantasote Leather Co., 444 Madison Ave., New York, N. Y.

### FLOOR FINISHES

**Heavy Duty Floor Seal.** Penetrative, waterproof, wear-resistant floor finish, quick-dry. O'Brien Varnish Co., South Bend 21, Ind.

### GARAGE EQUIPMENT

**Garage Door.** 60-lb. all-aluminum overhead door. Berry Door Co., Birmingham, Mich.

### HEATING AND HEATING EQUIPMENT

**Type T Tankless Taco.** Instant water heater to supply large volume of water quickly. Taco Heaters, Inc., 342 Madison Ave., N. Y. City 17.

### KITCHEN EQUIPMENT

**Hotpoint Masterpiece RC-8 Electric Range.** Deluxe model. Edison General Electric (Hotpoint), 5600 W. Taylor St., Chicago 44, Ill. All appliances now sold at uniform, national, delivered prices.

**Hotpoint Hostess RB-17 Electric Range.** Moderate-price model. Edison General Electric (Hotpoint).

**Hotpoint Century RC-15 Electric Range.** Low-price model. Edison General Electric (Hotpoint).

### LAUNDRY EQUIPMENT

**Deluxe Wringer Washer 130.** Portable. Extra-capacity porcelain tub. Blackstone Corp., 331 First Ave., New York City.

**Wringer Washer 132.** Portable. 8-lb. capacity porcelain tub. Blackstone Corp.

**Blackstone Combination Laundry.** Units for building in. Automatic washing, rinsing, drying, ironing. Production to start soon. Blackstone Corp.

**Thor Automagic Washer.** Clothes and dish washer in one portable unit. Hurley Machine Co., 2115 S. 54 St., Cicero, Ill.

### LAMINATES

**Thalid XR540.** Flame-resistant molding resin for plastic-cloth laminates; high structural strength. Monsanto Chemical Co., Plastics Div., St. Louis 4, Mo.

**Paraplex P-10.** Flexible resin laminate for impregnating fabrics and glass cloth, and as casting compound. Resinous Products & Chemical Co., 222 W. Washington Sq., Philadelphia, Pa.

### LIGHTING FIXTURES AND EQUIPMENT

**LumiNite Safety Pilot Plug.** Combination cord cap, convenience outlet, safety pilot light, plug-in device. Associated Products Co., 80 E. Long St., Columbus 15, Ohio.

**Tandemlamp.** Fluorescent fixture designed for symmetrical light reflection. **Louverplas** (glare control) shield. Doan Products Corp., Meriden, Conn.

**Twin Turret Lampholder.** Metal-cased device to hold 2 Mazda F 40-watt fluorescent lamps in secure contact. General Electric Co., Appliance and Merchandise Dept., Bridgeport, Conn.

**Single-Lamp Ballast.** Concealable flat disk with center hole for mounting, for 12" Circline fluorescent lamp. General Electric Co.

**Flur-O-Lock.** Disc-and-slot-key device to lock 20 to 100 W. fluorescent lamps in place. Laduby Co., 178 Oak St., New Haven 11, Conn.

**The Jefferson A-1240.** Fluorescent luminaire with curved **Skytex Satinol** glass panels, longitudinal baffle; 2 40-watt T-12's. Pittsburgh Reflector Co., Oliver Bldg., Pittsburgh 22, Pa.

**Germicidal Lamps.** Type A for worker protection; Type B for food sterilization. Sylvania Electric Products Inc., Salem, Mass.

**Circular Lamps.** Diffused light fluorescent lamp with translucent plastic rotating base, portable. Sylvania Electric Products, Inc.

**T-5.** Miniature fluorescent lamp, 110-125 V. a-c; 500 and 1500 hr ratings. Sylvania Electric Products, Inc.

**Black Light Lamp.** Operates on standard fluorescent equipment. Vio-Ray Mfg. Co., 5022 N. Kedzie Ave., Chicago 5, Ill.

**Circline Lamp Base.** 4-pin plastic base, 1" diameter ,for circular fluorescent tubes. Westinghouse Lamp Division, Bloomfield, N. J.

**Wiley Recessed Troffer.** Fluorescent fixture for ceiling recess as small as 7". Open, louvered, ribbed glass shields. R & W Wiley, Inc., 129 Dearborn St., Buffalo 7, N. Y.

### MECHANICAL CORE

**Home Service Plant.** Single unit incorporating heating, plumbing, electrical, bath, kitchen, laundry equipment, to be manufactured by Ingersoll Division of Borg-Warner Corp., Kalamazoo, Mich.

### ROOFING

**Hornlume.** Asphalt roof coating mixed with aluminum; reflector and insulator. A. C. Horn Co., 43-36 Tenth St., Long Island City 1, N. Y.

## . . . THERE *MUST*

### PLASTIC DOUBLETALK

Do you know the difference between a thermosetting phenolic cast resin and a thermoplastic vinyl chloride copolymer? Brother, you'd better! You're peeping over the rim of a plastic world right this minute; if you want to achieve some sort of human dignity, to make the best use possible of these bewildering new synthetics, you'd better find out something about them. So it's heartening to hear that the plasticians (to coin a word), choking a bit on their own polysyllables, are actively engaged in explaining and promoting themselves. The industry may be considered as having two parts: basic material manufacturers and fabricators. The manufacturer of raw materials has to carry more than his share of the burden of popular education in order to ease the fabricator's job and make possible enough raw materials sales to show the customary profit.

**Promotion** by individual material manufacturers ranges from enthusiastic notices of quick shifts from war to peace production to the announcement by Monsanto of the formation of an "application advisory group," known as the Plastics Technical Council. The Council will advise potential fabricators of end products from Monsanto plastics. It's a pretty reputable group; they've already recommended materials other than plastics in a surprising number of cases.

**Occasional table with lucite legs, natural wood top (colored enamel tops also anticipated) designed by Freda Diamond.**

Then there is the Plastics Materials Manufacturers' Association, which has formed technical committees and has recently embarked on a sensible promotion campaign. According to W. S. Landes, its president, houses and auto-

## BE A REASON!

mobiles of plastics have been pretty well discounted by now.

**In houses,** he points out, the largest, most satisfactory uses are apt to continue to be invisible. Plastics are now used in paints, varnishes, lacquers, paper, coatings, waterproofing, and impregnating materials. Plastic-bonded plywood, combinations of plastics, wood, and metals, and plastic-treated fabrics are other common uses. There are also, of course, the more obvious uses, such as plastic door knobs, light switches, switch plates, drawer pulls, etc. All told, from the building industry Mr. Landes expects the plastics industry to extract about $75 million a year, if building attains the volume hoped for. Against this conservative estimate we set, for whatever it's worth, the attitude of Rohm and Haas Co., manufacturers of Plexiglas. Last month we reported their traveling exhibition of a "dream suite," which seemed then and seems now courageous, imaginative, stimulating—and most timely. Here are plastics actually put to many of the uses which the average layman has been led to expect. But bear in mind that a plastics *manufacturer*, not a *fabricator*, is giving the show. As yet you can't buy the highly logical plastic one-holer.

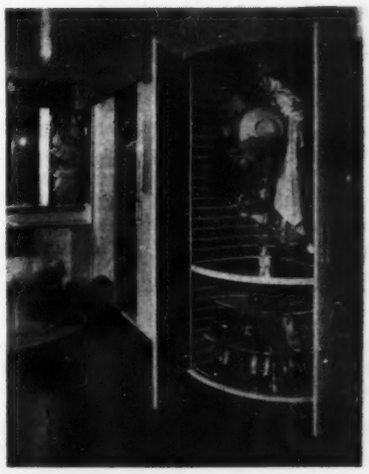
**As for the fabricators' side** of the picture, there is the Society of the Plastics Industry, composed of fabricators as well as individual technicians and designers. The Society's Technical and Engineering Division is preparing a technical handbook which will cover all phases of data required by engineers and product designers. The Society provides liaison between Government and the industry, and between private interests and the industry. Just issued is the Society's Classification Chart of plastic molding materials.

In a field closer to the construction industry, a new association has been founded: the Wood-Ply Research Foundation, Inc., an organization apparently formed by a number of lumber distributors to promote various types of wood-plus-plastics products, many of which matured during the war.

### CHRISTMAS—AND WE DON'T MEAN XMAS

We still remember vividly the family Christmas tree garlanded with tinsel rope, pendant with colored glass ornaments, bearing lightly its burden of cotton snow. We can even remember a less sophisticated tree down on the farm, a tree hung with brightly humble cranberries and popcorn strung on thread—after much thumb-pricking—and with taffy. Both trees were lit with candles. Inexorably, the candles gave way to carbon-filament series-wired incandescent lamps; Progress, oh, Progress! The filaments became tungsten, and series wiring gave way to parallel.

Now, dearie us, we can have fluorescent Christmas tree lights. Sylvania's manufacturing the strings—parallel wiring, of course—and the bulbs, which look like the familiar bright blown-glass ball ornaments except that they light up when you flip the switch. Really, the only drawback we see is that, even when lighted, the fluorescent bulbs are too subdued, too pastel, too sophisticated. The American Christmas is a day for kids aged 4 to 40; just the opposite of sophistication is the picture of Pop absorbedly running Junior's train for him. We could do with more garish lamps.



"Dream Suite," designed by Rohm & Haas, Plexiglas manufacturers. Plexiglas mirrors don't fog easily because the plastic is "warmer" than glass. Revolving cast Plexiglas hatrack and shoe shelves are typical gadget design. Bed alcove with transparent, curtained walls is designed to minimize air conditioning costs. Decorations are etched into Plexiglas, lighted and colored by fluorescent sources concealed at the edges of the plastic sheets. Edge-lighting does not affect transparency. In recess is easily cleanable, simple-surfaced toilet enclosure; wash basin is similarly enclosed though awkwardly designed. Curved Plexiglas shower door slides open. Shower rings supplant conventional nozzle, are individually controlled.

# MATERIALS and METHODS

## FORECAST FOR KITCHEN AND LAUNDRY

Speaking of Christmas, we're told a few home appliances will be in the market in time for gift purchasing; and if Mom has been getting along with one-cylinder models in the kitchen and laundry, she's likely to put a large dent in the bankroll, demanding new equipment as soon as she can get it. Most logical development for the laundry seems to be Blackstone's washer-drier-ironer series, which look like base cabinets and ought to be efficient as far as space is concerned. We can't pretend to pass judgment on their operation. Incidentally, we first published a note on this product last January.

But of all the appliances touted so bravely, there's not one American example designed for truly building into the kitchen or laundry. Apparently we must still be content with pseudo-streamlined "portable" (only they aren't) appliances. The British have at least two mechanical refrigerators designed to be built into the wall, which can be so located as to height that the housewife won't have to break her back to find a jar of mayonnaise at the back of the bottom shelf. It used to be rumored that we had such a product in this country, but that it was awfully expensive. One such product was demonstrated—in mock-up and *not* by a refrigerator manufacturer—during the war.

**The reasons?** You know them: practical decisions of the manufacturers as to what is profitable for mass production, based on the accepted popular regard for refrigerators as "portables" which move with the family as it goes from house to house, and on the other cussed customs. Is this basis valid? Should it apply to apartment houses and apartment hotels? Should it apply even to houses designed, financed, and built for a definite occupant rather than for lease? Why aren't both kinds of equipment generally available in the U.S.A., home of progress?

But portable or not, don't expect too many appliances to be available at retail until next year. The few now appearing are only the first gentle wash of the incoming flood.

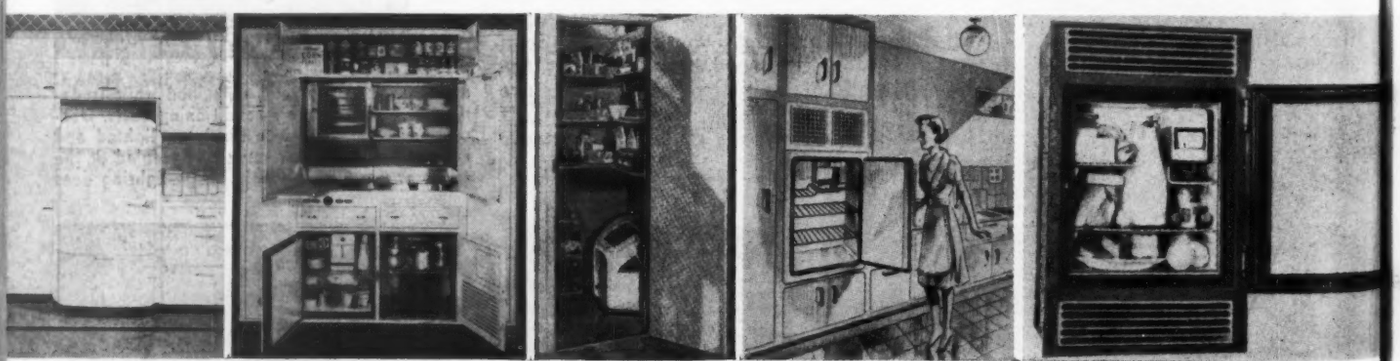
## "MECHANICAL CORE" ANNOUNCED

Enthusiastically, the Ingersoll Division of the Borg-Warner Corporation has just announced plans for putting into production the mechanical core which so many house designers have proposed. In it are to be combined a forced-warm-air heating unit, gas- or oil-fired, kitchen counter space, storage, refrigerator, range, sink, laundry washer and drier, domestic hot water heater, plumbing connections for an adjacent bathroom and meters, piping, etc. The unit is to be extremely compact, is to have built-in lighting, is designed to pass through the house door, and is easily serviced.

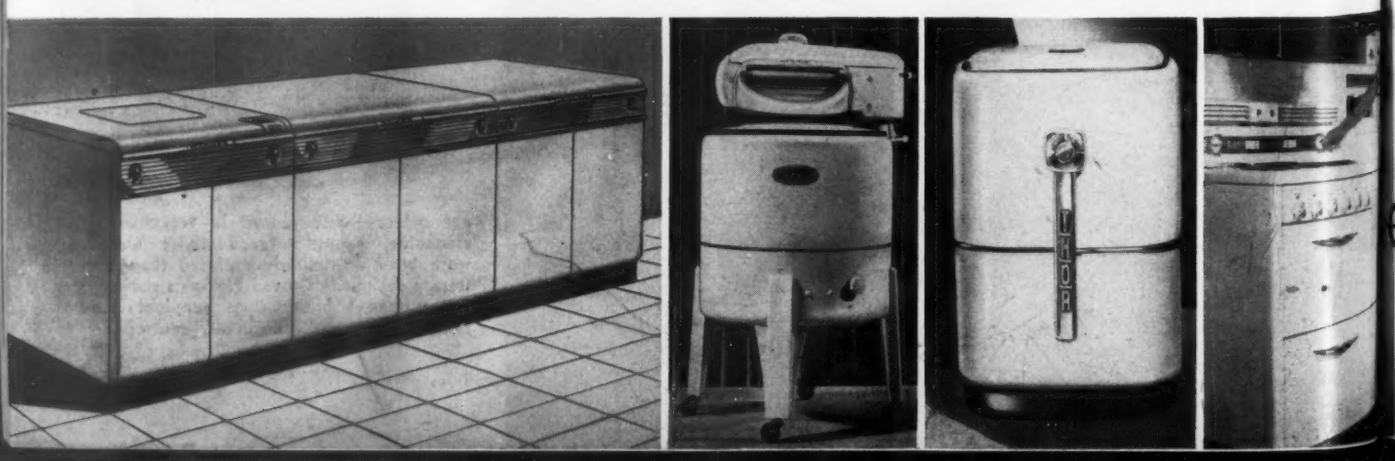
One of our ablest designers, with a competent staff of architects, engineers, and technicians, designed the unit. Until certain remaining difficulties are ironed out, no exact descriptions will be available. Meanwhile, Ingersoll has commissioned several architects to design experimental houses around the new core. Several conclusions have become apparent: Use of the core reduces house construction costs not only because the expensively separate mechanical items are combined for economical mass production; it also permits substantial reduction of cubage. The unit is aimed at low- and moderate-priced homes. Production is scheduled to start toward the middle of 1946; the manufacturers expect their entire output to go to large scale operators rather than individual house builders.

Rightly, Ingersoll envisions a tremendous market, judging by solid census statistics as well as wild guesses about construction activity. Apparently the company is betting that popular acceptance will be satisfactory (we'd bet on that, too), although possible difficulties with building trades unions have not been publicly discussed (we'd be less sanguine about this). It's a monumental task they're undertaking. When problems of design, fabrication, marketing, and installation are licked, and the first mechanical core rolls off the production line into the utility space of the first actual mechanical-core house, the millenium will be mighty close.

**Kitchen refrigeration, left to right: typical U.S. product (this one from Hotpoint); Parsons "Pureaire" ventilated kitchenette for building-in, with integral refrigerator; and three British examples: cold-conditioner for cold storage pantries; "Standard" electric refrigerator for building-in, produced by several collaborating manufacturers; and gas refrigerator for building-in (none of these 3 available here).**



**Other U.S. appliances, left to right: Blackstone Combination Laundry with automatic washing, rinsing, drying, ironing in counter-cabinet sized units totaling 80" in length; Blackstone portable washer; Thor portable washer with 2 interchangeable tubs, one for dishes, one for clothes; Hotpoint automatic electric range.**



when accurately made, develop strength substantially equal to that of the plywood itself. Plain, stepped, or serrated joints are used.

The newest development in oversize sheets is arrangement of the plies to facilitate maximum curvature in one or more locations in the panel. Greatest curvature is possible when the arc is at right angles to the grain of surface plies. Proper arrangement of individual sections during manufacture of scarfed sheets permits location of the grain to suit various job conditions.

**Extra-thick Plywood** plates have also been manufactured up to 3" or 4" thick, for use in roof truss construction with ring connectors; and as gusset plates or knee braces, bolted or nailed. Stringer planks 2½" thick have also been manufactured for war uses. Like the oversized sheets, thick plywood is manufactured only on special order, to specification.

## HARDWOOD PLYWOOD

Hardwood plywood (including Eastern Red Cedar) is graded differently than Douglas fir plywood. Many different types of wood are used for surfacing, cores, and crossbanding; each type of face-wood, for instance, is available in several grades of plywood, and there are also some overall considerations applying to all types of hardwood plywood. The principal factors are moisture resistance of the adhesive, quality of face veneer, quality of backs, construction of cores, and crossbanding.

**MANUFACTURE**—Hardwood plywood is manufactured like Douglas fir plywood; in addition, face veneers may be cut in several different ways (rotary, back-cut rotary, quartered, etc.); and cores may consist of veneers or solid (sawn) lumber (for cores, see under "Grading"). Face veneers may also be sliced or sawn; different methods produce different grain effects. Some may be more efficacious than others with certain types of woods, or all may be suitable for a given type of wood. Stumps, crotches, burls, etc., may furnish special grain characteristics. These different methods and variations in the basic material make it possible to obtain many different types of figured veneers. In some woods, notably oak and walnut, there may be many standard types based on method of sawing face veneers, kind and location of wood in the tree, etc.; and each standard type of plywood is available in several grades.

**Rotary cut** veneers are obtained by mounting a log on a lathe and rotating it against a knife. Rotary veneers are obtainable in large widths. Grain is swirly and variegated. **Half-round rotary** veneers are obtained by mounting half a log on a "stay" log; the stay is mounted in the lathe. The knife cuts a wider sweep; figure obtained is milder, shows some heart character, and adjacent sheets are symmetrical (for matching). **Back-cut rotary** veneers are obtained by mounting a half-log on a stay log with the bark side to the stay, the heart exposed to the knife. Striped figures, with more heartwood, are produced. **Quarter slicing** is the most expensive method of cutting veneers; the log is cut approximately at right angles to the annual rings to produce the familiar flaked figure. **Sawn** veneers are made like boards; the method is wasteful and is used mainly for comparatively thick veneers, unusually hard woods, those which are difficult to handle properly when cut with a knife, or for plywood intended for special purposes.

**Adhesives** used in making hardwood plywood include vegetable and animal glues, casein glues, and synthetic resins. Casein and urea resin glues produce moisture-resistant plywood; only the phenolic resin glues produce waterproof plywood.

**Sizes:** Standard sizes are 48", 60", 72", 84", and 96" long by 24", 30", 36", 48" wide. Standard thicknesses are: ¼", ⅜", ½", with rotary-cut cores, 3 or 5 plies; and 13/16" with lumber core, 5-ply. Additional plies, other thicknesses and sizes are obtainable on special order.

**GRADING—Moisture resistance** is graded Type 1, 2, or 3 depending on the degree of resistance. Type 1 (high moisture resistance) is that in which the bonds are highly resistant to all types of severe exposure to water and dampness, highly resistant to attack by micro-organisms, and of high strength. Type 2 (moderate moisture resistance) is required to resist water and dampness. Type 3 (low moisture resistance) has to have high bond strength, but moisture resistance is not required. Hardwood plywood is manufactured to more rigid moisture resistance standards, but only when specified and specially ordered.

**Face veneer** quality grading varies with the wood used, some woods being available in greater range of quality or suited to applications where the range may be either limited or expanded. In general, the grades, in descending order of quality, are: A, 1, 2, 3, and 4. Hardwood plywood with both faces of equal quality (no "back") is designated: AA. Distinction between the grades depends on the number of minor defects (not affecting structural soundness or quality of potential finish) admitted, on color selection, grain matching, etc. For special matching, etc., see "Special Grades."

**Backs.** These are generally available in two grades only: No. 2 and No. 3. No. 2 ("sound" back) is the better quality, being sound, with minor defects admitted, no color selection or grain matching, and machine sanding. No. 3 ("reject" backs) may have certain defects, open joints, etc., and are unsanded.

**Cores** may be sawn, sawn and banded, or rotary cut veneers. Sawn lumber cores are built up of boards and come in three grades. **Grade A** sawn cores may have any specified type of tight-glued joint, are built of random widths in strips the full length of the panel and not over 4" wide. Discolorations are permitted, but no defects. **Grade No. 1** ("Regular") is similar to Grade A except that butt joints are permitted except in outside strips, and certain defects and secure patches are admitted. **Grade No. 2** ("Clear Edge") may be similar to either Grade A or No. 1, but edge strips must be clear of defects to a depth of 1½" on all sides to permit shaping or molding.

**Banded cores** are sawn cores in which one or more edges consist of strips of any specified wood, clear of defects, to permit shaping or molding. Tight butt-jointed edge strips are admitted. Standard band depth is 2½" (rough) for plywood 13/16" or thinner; net width may be accurately specified. Standard designations are: B1E (banded one end); B2E (two ends); B1S (one side); B2S (two sides); B3 (two ends and one side); B2S1E (two sides, one end); B4 (two sides, two ends). Mitered cores or others differing from the above description are special cases.

**Rotary cut cores** consist of a single sheet of veneer and come in two grades, No. 1 and No. 2. No open joints are admitted in No. 1; No. 2 admits these and other minor defects without limit.

**Crossbanding** is graded in two classifications: No. 1, clear of open defects, with well made joints; and No. 2, which admits joints without limit.

**Special Grades:** Certain matchings of face veneers, and some special types of banded lumber cores, command higher prices because they are departures from the usual manufacturing practices. These "extras" include **Veneers:** special matching (diamond, book, etc.); center, balanced, or pair matching; matching in sets, off-center, to detail or blueprint; special combinations of woods, etc.; **Banded Cores:** excessive area of banding (see CS 35-42); also banded panel lengths over 48" or widths over 36".

# PLYWOOD: 1





This is the first of several Building Product Fact Sheets on plywood. The second, to be published next month, will contain data for use in conjunction with this sheet.

Plywood consists of an odd number—3 or more—veneers of wood bonded together with one of several types of adhesive, with the grain of each layer laid perpendicular to that of adjacent layers. This method of manufacture substantially improves the structural qualities of wood by counteracting weakness parallel to the grain, by increasing dimensional stability under varying moisture conditions, and by utilizing wood containing defects which might otherwise render it unsuitable for architectural use. Plies either side of the central core are "balanced" as to thickness, use of identical woods in opposing plies, etc., to offset warping and other disadvantageous characteristics of wood.

The two principal kinds of plywood in common use are: **Douglas fir plywood,** for structural and some finishing applications both interior and exterior; and **hardwood plywood,** used architecturally where superior surface qualities, rare woods, fine finishes (as in wall surfacing or furniture), etc., are required. Such specialties as plywood faced with white pine are also available; and there are becoming available plywoods faced with materials other than wood, notably **plastics** and **metals.** A parallel development is production of single sheets of veneer (not plywood) surfaced on one side with plastic. This product does not have the strength or rigidity of plywood, but is useful where its surface and appearance are desired although other plywood characteristics can be dispensed with.

Grading of the two principal kinds of plywood is based upon differing qualities determined by characteristics of the wood used, manufacturing processes, and intended use. Douglas fir plywood standards are contained in Commercial Standard CS 45-45; hardwood plywood in CS 35-42, both published by the National Bureau of Standards, U. S. Dept. of Commerce.

## DOUGLAS FIR PLYWOOD

**MANUFACTURE**—Douglas fir plywood is built up entirely of "rotary cut" veneers, which are produced by rotating a log against a cutting knife. The 3-ply panel consists of a **face** of good quality, a central **core,** and a **back** veneer of less good quality than the face. When both sides of a panel are of equally good quality, both outer layers are called "faces;" there is no "back." In plywood built up of 5 or more layers, those between core and face, or core and back, are called **crossbands.**

The adhesive may be one of several types of synthetic glue; animal gelatin or starch glues do not produce fir plywood used for architectural purposes. Casein and urea-formaldehyde glues produce **moisture-resistant** plywood; phenolic and resorcinol-phenol glues produce **waterproof** plywood (called **exterior** plywood). Both types are manufactured in several grades. Moisture-resistant plywood is available from 3/16" to ¾" thick in 3 or 5 plies ("Industrial" grade available to ⅞", 7-ply) and exterior plywood from 3/16" to 1-3/16", 3 to 7 plies.

**MOISTURE-RESISTANT GRADES**—All fir plywood guaranteed to conform to the commercial standard is inspected and grade-marked (stamped or branded) under the rules of the Douglas Fir Plywood Association.

**Standard Panels.** Sound 2 Sides or Sound 1 Side (SO2S or SO1S). SO2S panels have both faces of one or more firm, smooth pieces of veneer, well joined, reasonably matched, free from open, unrepaired defects although certain variations, neat patches, etc., are admitted; both faces are suitable for paint. SO1S panels have one similar face; the back may contain some minor defects, but is sanded. Grade-mark: "Plypanel" on edge of panel.

**Wallboard (WB)** is similar to Standard SO1S panels but is made in only a few standard sizes and the back may contain additional defects provided these do not seriously impair strength or serviceability. Grade-mark: "Ply Wall" in square device stamped on back of panel.

**Sheathing (SH).** Unsanded, made in a limited number of thicknesses and sizes, with a solid face except for some permissible defects and a back at least equal to Wallboard grade. Sheathing panels are scored or marked on standard stud spacings to facilitate nailing. Grade-mark: "Ply-Scord" stamped at intervals across face, also in circular device.

**Industrial.** Unsanded, both faces free of knotholes and large borer holes or pitch pockets. Core and crossbands of firm stock with small knotholes permitted.

**Concrete-form Plywood.** Sanded both sides. Several sizes and thicknesses. Faces similar to Standard panels SO2S; outside plies at least ⅛" thick before sanding except on ¼" thick panels; no knotholes permitted except occasionally in cores of 5-ply panels only. Adhesive is highly water-resistant; panels are edge-sealed against moisture penetration and have faces oiled at the mill unless otherwise specified. Grade-mark: "Plyform" in diamond device stamped on face.

**Door Panels.** 3-ply, ¼" thick, sanded, both faces similar to Standard panels.

**EXTERIOR GRADES**—These are all waterproof, will retain their original form when repeatedly wet and dried, and are suitable for permanent outdoor use. Core gaps and voids that impair strength or serviceability are not permitted. No veneer can be thicker than 5/16". All grades are stamped or branded "Ext." on the edge.

**Marine Exterior** grade is of special quality. Faces must be free of all open defects, must be all heartwood; diagonal grain is limited to slope of 1 in 8. Face plies can not be thicker than ⅛" after sanding, interior plies 3/16". Special requirements govern crossbands and cores as well as faces. Adhesive must withstand fresh and salt water tests. Grade-mark: "Marine Ext.," stamped or branded.

**Good 2 Sides Exterior (G2S-Ext.)** has 2 good faces, each of a single piece of heartwood veneer, free from open defects, with only small, well matched patches.

**Good 1 Side Exterior (G1S-Ext.)** has 1 face similar to G2S-Ext., the back equal to SO2S exterior (see next paragraph).

**Sound 2 Sides Exterior (SO2S-Ext.)** is similar to SO2S moisture-resistant grade.

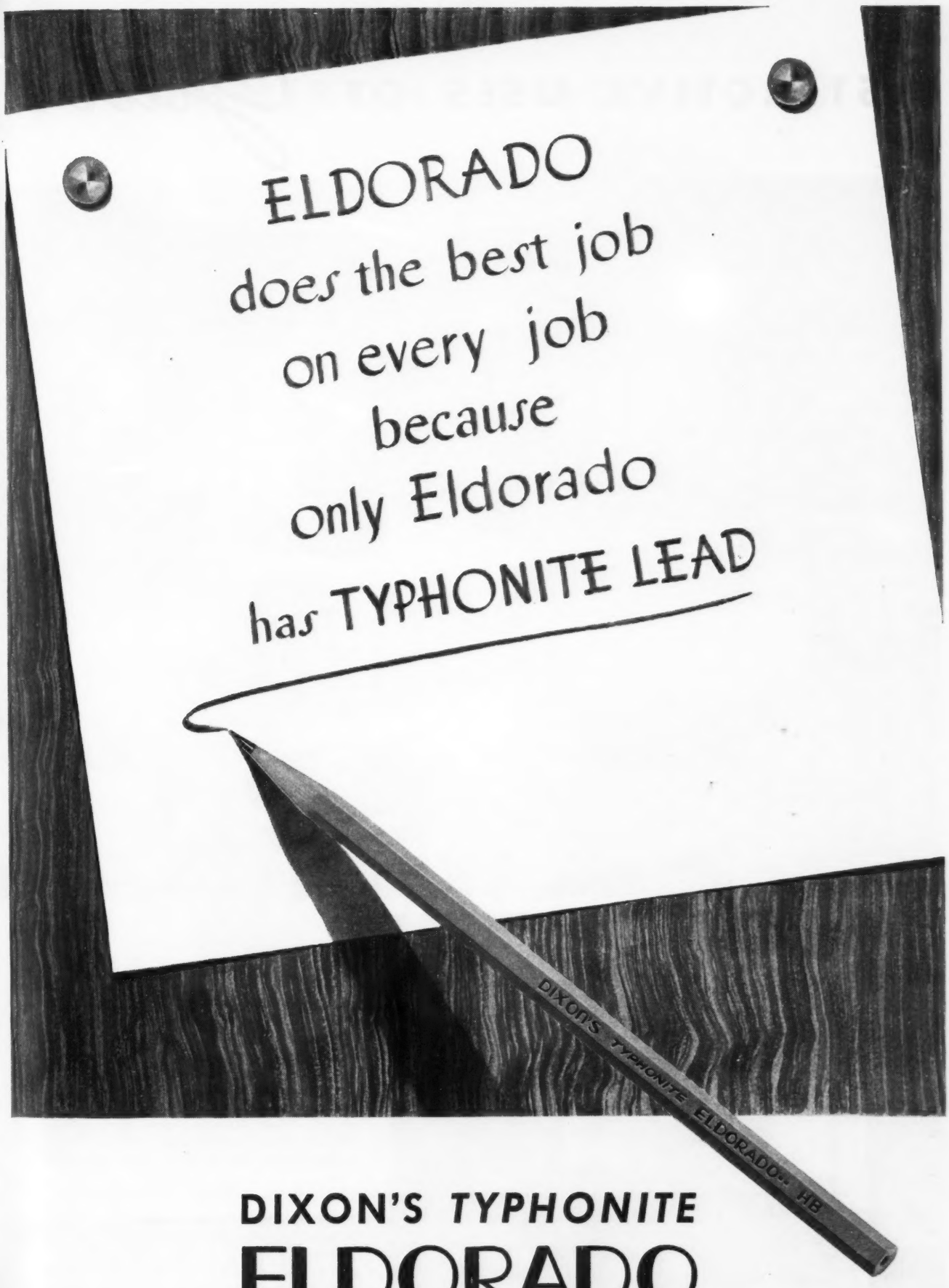
**Sound 1 Side Exterior (SO1S-Ext.)** is similar to SO1S moisture-resistant grade.

**Sheathing Exterior (SH-Ext.)** Unsanded, this grade is similar to moisture-resistant sheathing grade except that face veneers must be of better quality.

**Industrial Exterior** is of higher quality than moisture-resistant industrial grade; permitted face defects must be fewer and smaller; light sanding to remove excess glue, etc., is permissible but size tolerance is same as for unsanded grades.

**Concrete-form Exterior** has faces of the same quality as SO2S-Ext. plywood, is made only ⅝" and ¾" thick, and is otherwise manufactured in the same way as moisture-resistant concrete-form plywood.

**Jumbo Sizes** of Douglas fir plywood are available. These are specialties, manufactured to order in widths up to 9 ft. and lengths up to 50 ft. Maximum length is based upon freight car sizes. Panels up to 70 ft. long have been produced and transported on three flat cars equipped with special swivel mounts. Most common lengths are from 20 to 35 ft. Width is limited by the size of manufacturing machinery. The usual manufacturing practice is to join standard length panels with scarfed, resin-glued, hot-pressed joints, which,

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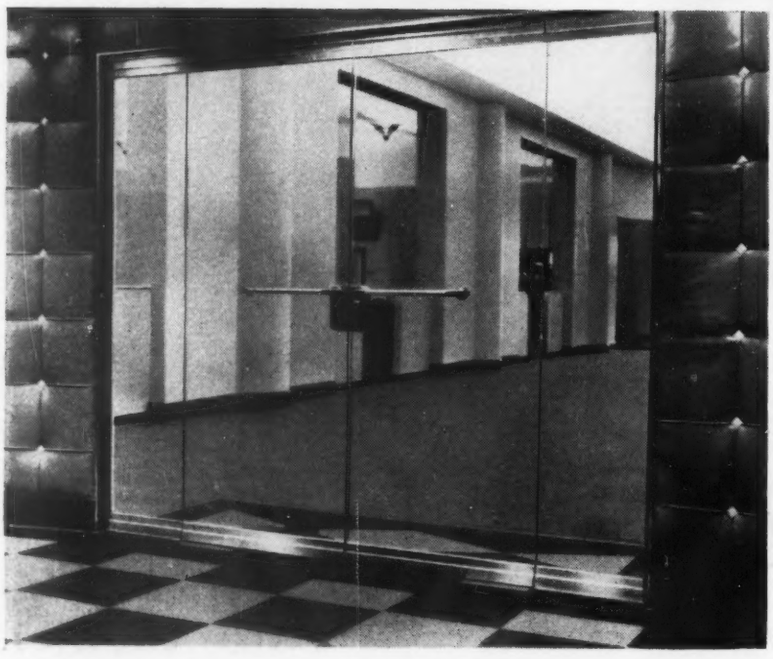

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**INTERIOR CONNECTING DOORS,** or building entrances, take on distinction and beauty when Herculite Plate Glass doors are used. These glass doors permit clear, uninterrupted vision through them. Yet a special tempering process makes them exceptionally resistant to shock and impact—so that they can withstand long, hard usage.

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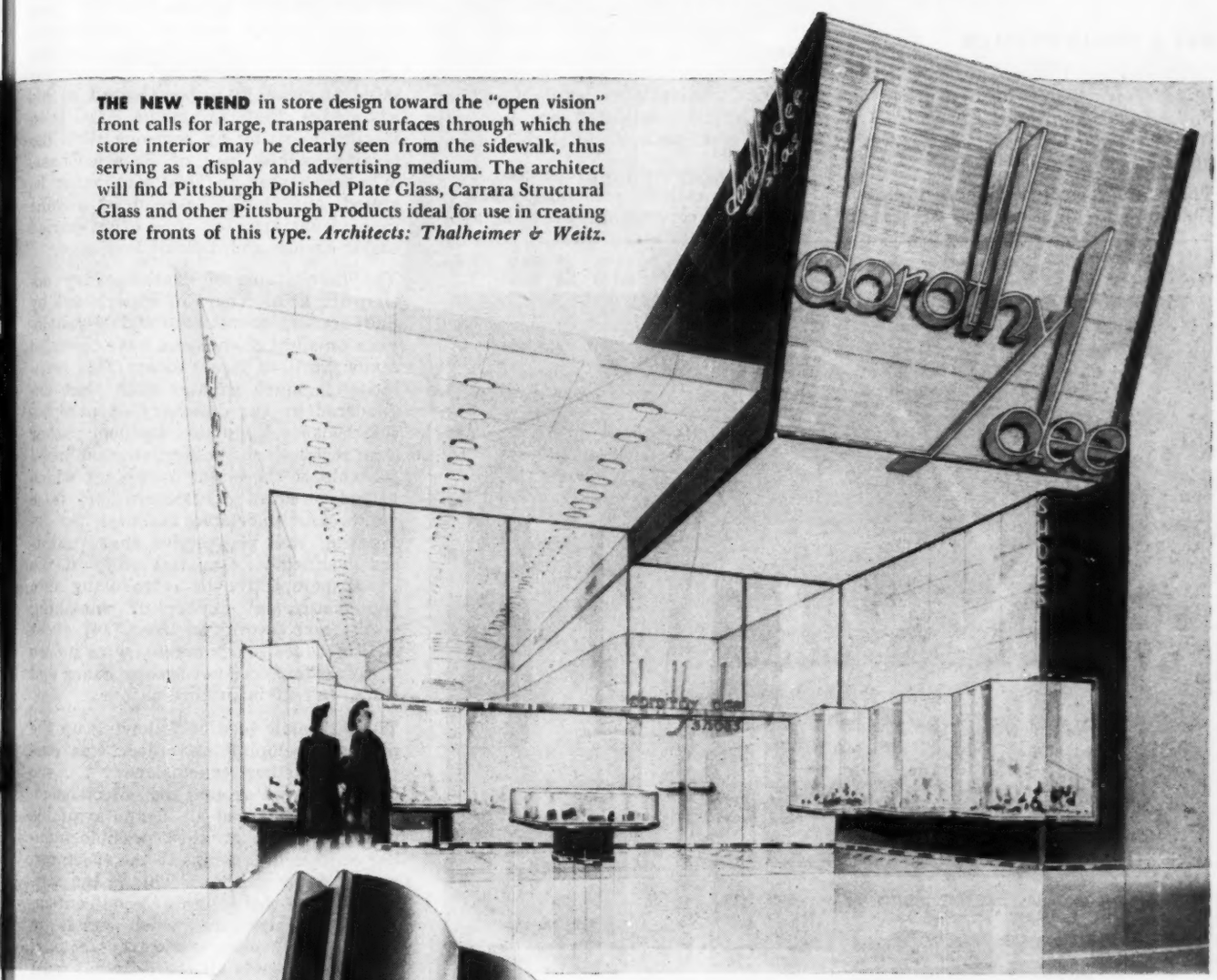


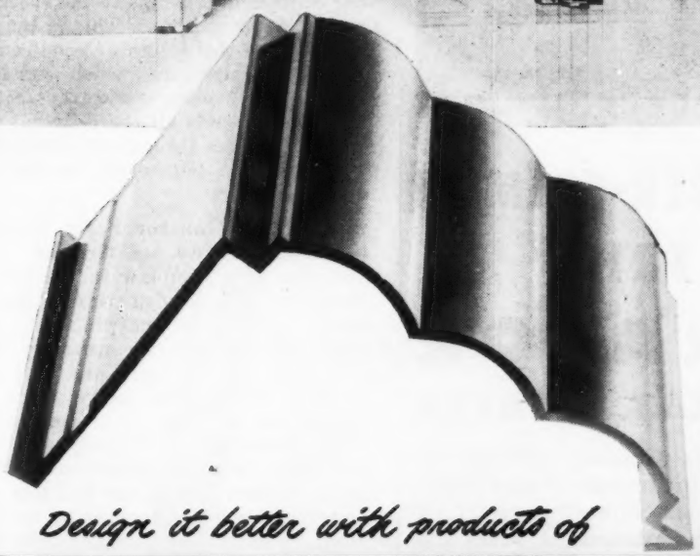

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# Reviews

## NOT A SIMPLE PROBLEM

*Language of Vision. Gyorgy Kepes. Introductory essays by S. Giedion and S. I. Hayakawa. Paul Theobald, 5 N. Wabash Ave., Chicago, Ill., 1944. 228 pp., illus. $6.95*

There are few places where it is possible to find architectural—or esthetic—criticism which is free of clichés or fully comprehensible. Critics too often produce jabberwocky or else degenerate into pat "don't like it's." When these fuzzy minds are set for traditional patterns—and declaim unintelligibly on the merits of representational fine arts or of Colonial architecture today—they are considered cultured sages. Equally fuzzy minds, but with modern sympathies, attempting to explain and justify the new esthetics are generally rated (often with cause) slightly balmy.

There is, however, a great need to expound the esthetic principles which underlie good contemporary art and architecture; just as surely as ancient Greek and Gothic production had standards, our own work is developing criteria of good design. These have been the creation, particularly, of the past two generations and Kepes does not presume to add any new approaches. His book is an attempt to state the experimental origins of the new esthetic principles and just what these are. Though his mind is clear, he is so steeped in his knowledge that *Language of Vision* merits rewriting by someone with the straight simple pen of Stuart Chase. What is stated in this book must be stated, and should be read by anyone in a visual art; but it is often buried under clichés and difficult language.

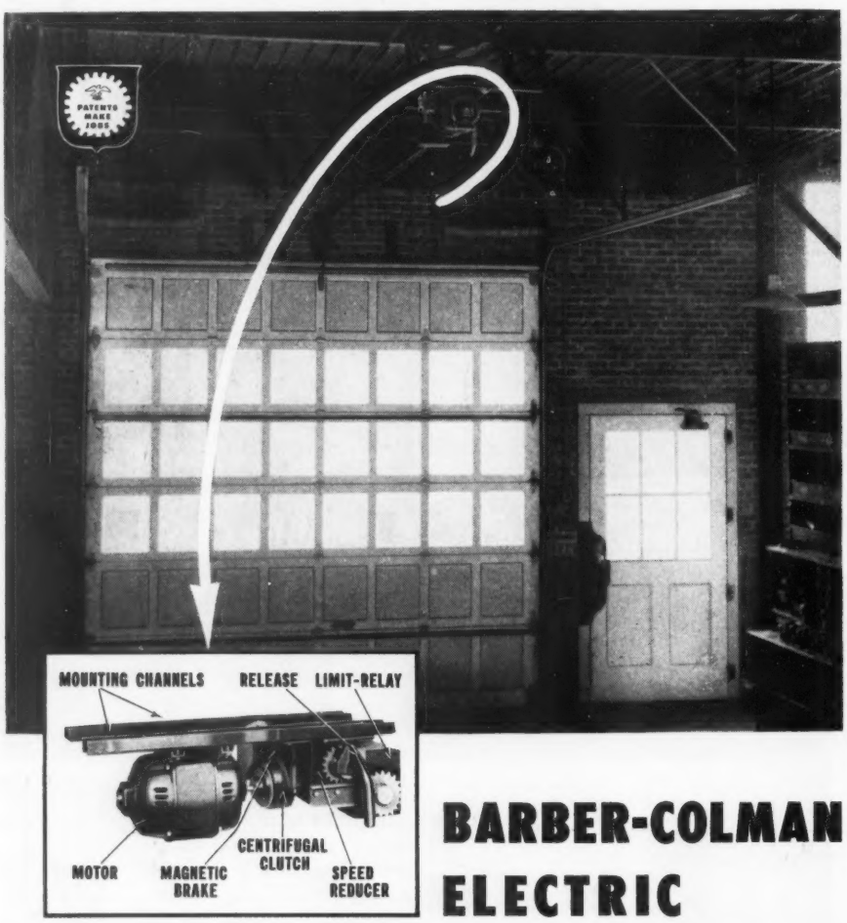
The foundations of contemporary design are firm. Years of experiment by fine artists, architects, and psychologists on sight phenomena have revealed a new world of visual ideas. This revolution is much greater than that engendered by the discovery of perspective because it creates freedom rather than restriction; perspective established the rule of the single viewpoint which helped create architecture of false fronts and unrelated facades. So restricting was perspective that "painters modified . . . spatial unity of the linear perspective by introducing into one picture a number of vanishing points and several horizons." A great deal of education is necessary to insure that freedom does not become chaos and Kepes' effort is in this nature.

The "dynamic idea of following up the planes enveloping an object was carried to further conclusions . . . the painter moved around the object, penetrated it, and used all means available to describe the greatest possible number of its relationships to the spectator, and to other objects." This is the attitude behind the design of good contemporary architecture which exists in time: as the observer walks about it and comprehends all the different mass groupings, sees through the large glass surfaces, and senses the texture contrasts.

Although the author never expresses such an idea, we are tempted to say that the only real law in the new esthetic world deals with criminal neglect; neglect of any of the precious knowledge we have gained concerning vision. For there are no hard and fast rules of good composition today; it is presumed that the sort of information and ideas contained in *Language of Vision* will help train the creator to produce a good picture, poster, or building (the latter dynamically formed by its function).

Architects are becoming more and more dependent upon such facts, rather than rules. Design is increasingly the creation of patterns of masses, textures, and colors; the material is then selected for function and visual effect (which is after all a function). "Contemporary architecture utilizes the transparent quality of synthetic materials, glass,

*(Continued on page 112)*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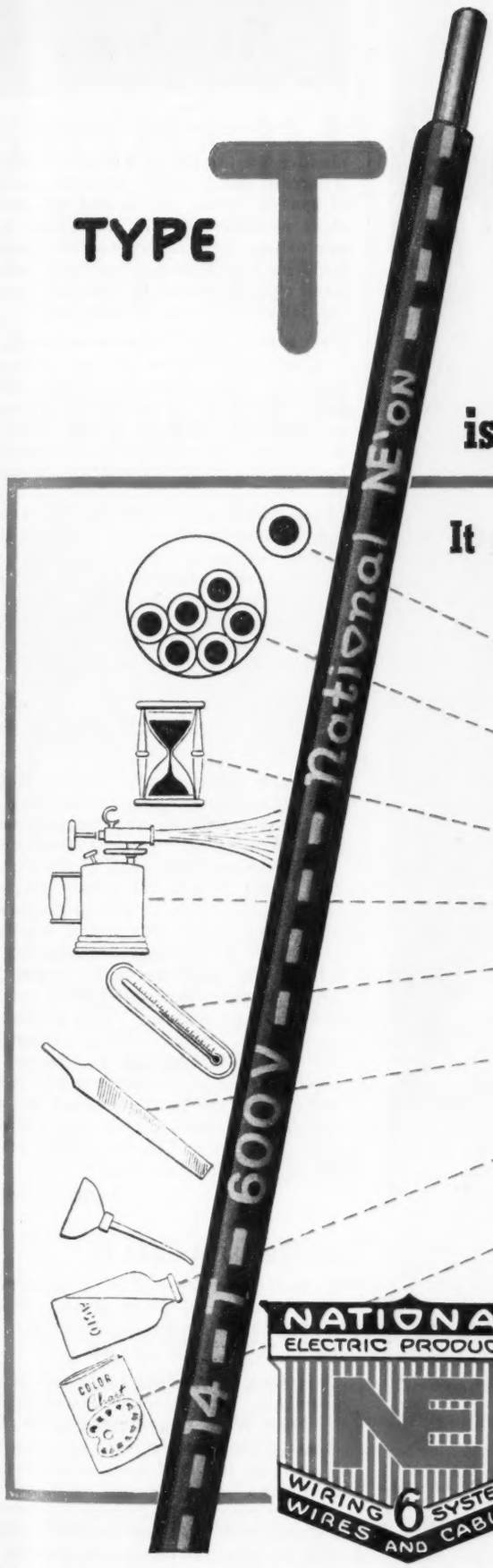


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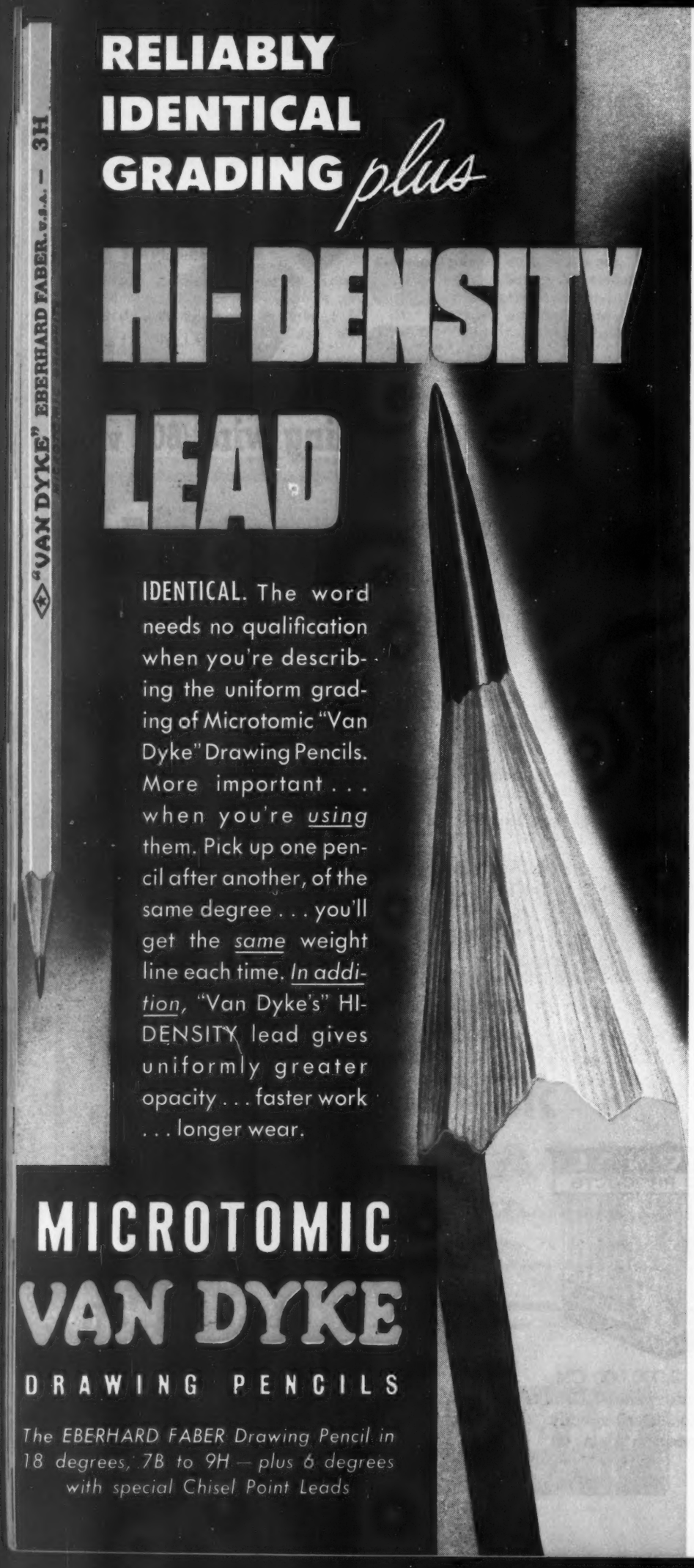
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# Reviews

*(Continued from page 110)*

plastics, etc., to create a design that will integrate the greatest possible number of spatial vistas. Inside and out are in close relationship . . . reflections and mirrorings, transparent and translucent building materials are carefully calculated and organized to focus divergent spatial vistas in one visual grasp."

This association of diverse materials in a single composition is not a simple problem. The architect, a visual artist, deals with visual impressions which are as much the creation of the onlooker as his own. The eye and mind seeing a building contribute something—crudely, an optical illusion, more finely, a sense of spaciousness (or tightness, as it may be). "Color surfaces are modified also in their areas. A light-colored figure on a dark area appears larger than a dark-colored figure of the same size on a light background. . . . The retinal impressions are constantly overlaid by the memory of previous experiences." To predict the response of the viewer requires knowledge and it is this which Kepes has tried to organize and state in his book.

Although *Language of Vision* is not directly concerned with architecture, its ideas are related to architectural problems. A building, beyond its basic functional requirements (and really including them) is a three-dimensional abstract composition. "Living space implies a perpetual balance of opposing directions. The enlarged dimensions of human knowledge demand a new equilibrium between man and nature and individual and society." The architect's problem is so much more intriguing than that of Mondrian or Picasso; he must consider not only what will please and educate the mind, but what will satisfy the soul, pass the building commissioner's office, and fit the client's purse. Intriguing? Exhausting!

DAVIDSON-SMULL

## AS THE BRITISH SAY IT

*A Short Dictionary of Architecture. Dora Ware and Betty Beatty. Philosophical Library, Inc., 15 E. 40 St., New York, N. Y., 1945. 109 pp. $2.75*

This book of architectural definitions, from Abacus to Zoophorus, was written by Miss Ware and illustrated by Miss Beatty, apparently for British readers. The terms included are already in general and architectural dictionaries. Anyone who has had more than casual contact with building in this country will be familiar with the meaning of most of the ordinary working terms included, except possibly the strictly British ones (cladding, soaker, sommer, spur stone, torching, wood wool slabs).

*(Continued on page 114)*

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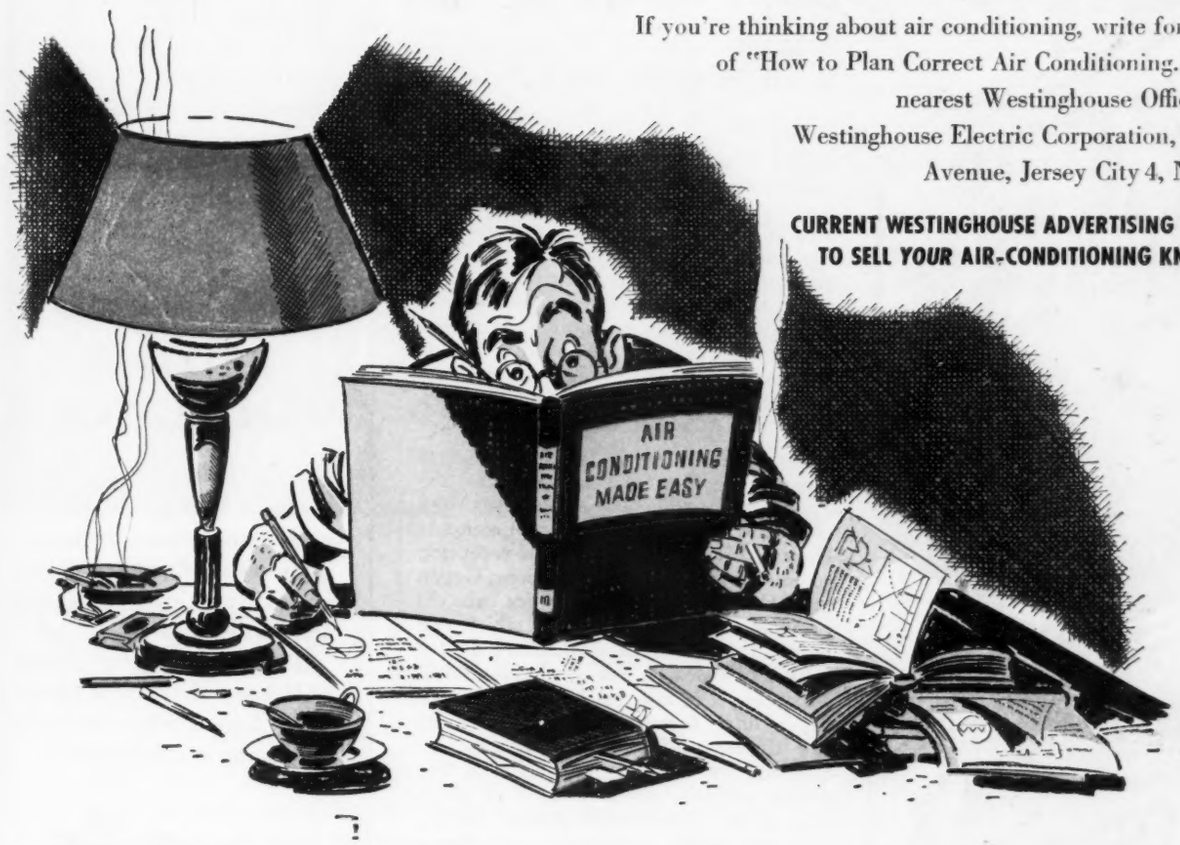


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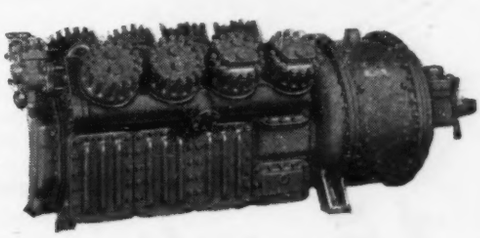

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# Reviews

*(Continued from page 112)*

The definitions of terms from the historical architectural styles which make up a large part of the contents add little to those available elsewhere.

The book's two-page bibliography on architecture and building is limited to English publications.

LAWRENCE E. MAWN

## Periodicals

**Reviewed by Maude Kemper Riley**

**INTERIORS**
**11 East 44th St., New York, N. Y.**

**August 1945**

Editor Francis de N. Schroeder tries hard to discern new trends in the special issue of *Interiors*—the 5th Annual Collection of Work by Leading American Designers. Thirty pages of photographs and comment tell the story of advancement in design, with the sad tabulation of only two recognizable differences chargeable to 1945: the influence of California modernists on house design; the decline of a once-revived interest in wallpaper (due, of course, to war).

Among recent work by 40 designers from nine states, responsible for show rooms, offices, homes, stores, and churches, these may be complimented: Horace Terrell's mural for the reception room of a men's wear show room; Gruen and Krummeck's solution for an old problem—name letter-blocks which can be read from three directions; Pietro Belluschi's design for a simple Methodist chapel in natural finish maple and fir, a dark lacewood backdrop behind the Cross, adding drama without destroying the churchly character of this young people's basement meeting place. Unique as a problem is Albert Kahn's (of Associated Architects and Engineers) sketches for the Evansville Memorial Airport in Indiana—a restaurant overlooking the field, so terraced and glassed, its ceiling so flared, its furnishings of plastic and aluminum so designed, as to make dining at the airport next thing to the sensation of traveling by air.

**September 1945**

Seven sickening photographs of a Guildery Gift Shop, designed in Birdcage Baroque—which in decorators' terms means: pendant baskets of white wrought iron, pink scalloped counters, beaded rods, net-skirted domes, ice-cream parlor furniture, ferns, and ribbons—fail to reveal where this glass-front shop is located—that we might avoid it. It's the "brain-child of a young couple, Eve Brand and Mel

*(Continued on page 116)*

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# Reviews

*(Continued from page 114)*

Gussow, who met and married while working for R. H. Macy & Co."

The issue is redeemed by an article on the office designs of Sandro Girard for Detrola Corporation executives' private offices. Curving desks, jutting or cantilevered from the wall, long sills for books, cabinets beneath extensive waist-high shelving, make functional, neat, proficient think-and-act quarters for busy men.

**REAL ESTATE REPORTER AND BUILDING NEWS**
**1674 Broadway, New York, N. Y.**
**July-August 1945**

A nation-wide survey of postwar requirements for urban housing, conducted by the Curtis Publishing Co., is summarized by Harry C. Stinnett, and reveals: a preference for Colonial or Early American design (nearest competitor being the bungalow), then modern design, then the Cape Cod cottage, and ranch-patio combination. Running a poor last is English style home design.

32% of the prospective home owners interviewed were open to style suggestions. Anticipated mean price of house is $6,233. Majority demand is for three bedrooms. One bathroom will suffice for 71%, although more are desired. Intense interest is indicated in adequate insulation, soundproofing; few were concerned with "push-button" gadgets. Only 18% deemed an architect's advice necessary; the others plan to deal through real estate agents, builders, and building material dealers.

**THE ARCHITECTURAL REVIEW**
**45, The Avenue, Cheam, Surrey**
**September 1945**

Whole issue devoted to *Windmills In England*. Text and photographs of what appear to be hundreds of existing windmills of all types are by Rex Wailes, a mechanical engineer and leading expert on windmills in England, adviser to the Society for the Protection of Ancient Buildings. The author shows the windmill as a piece of workable machinery as functional as a clock in its body and fitting. Handsome cover is a reverse-plate, white-on-maroon, reproduction of a drawing of a 16th century post mill interior, from a plate in Diderot and d'Alembert's *Encyclopédie* folio.

**BUILDING AND ENGINEERING**
**20 Loftus Street, Sydney, Australia**
**June 25, 1945**

An extraordinarily entertaining and informative, compact little journal, is the official organ of the Master Builders'

*(Continued on page 118)*


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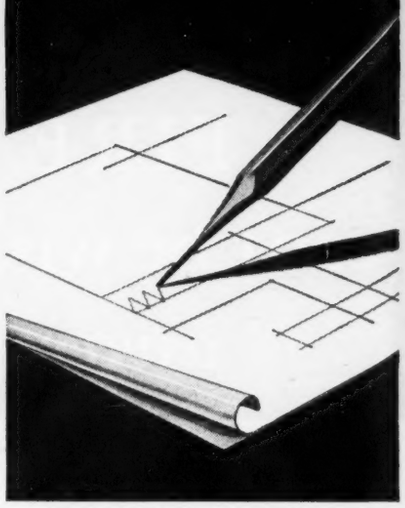

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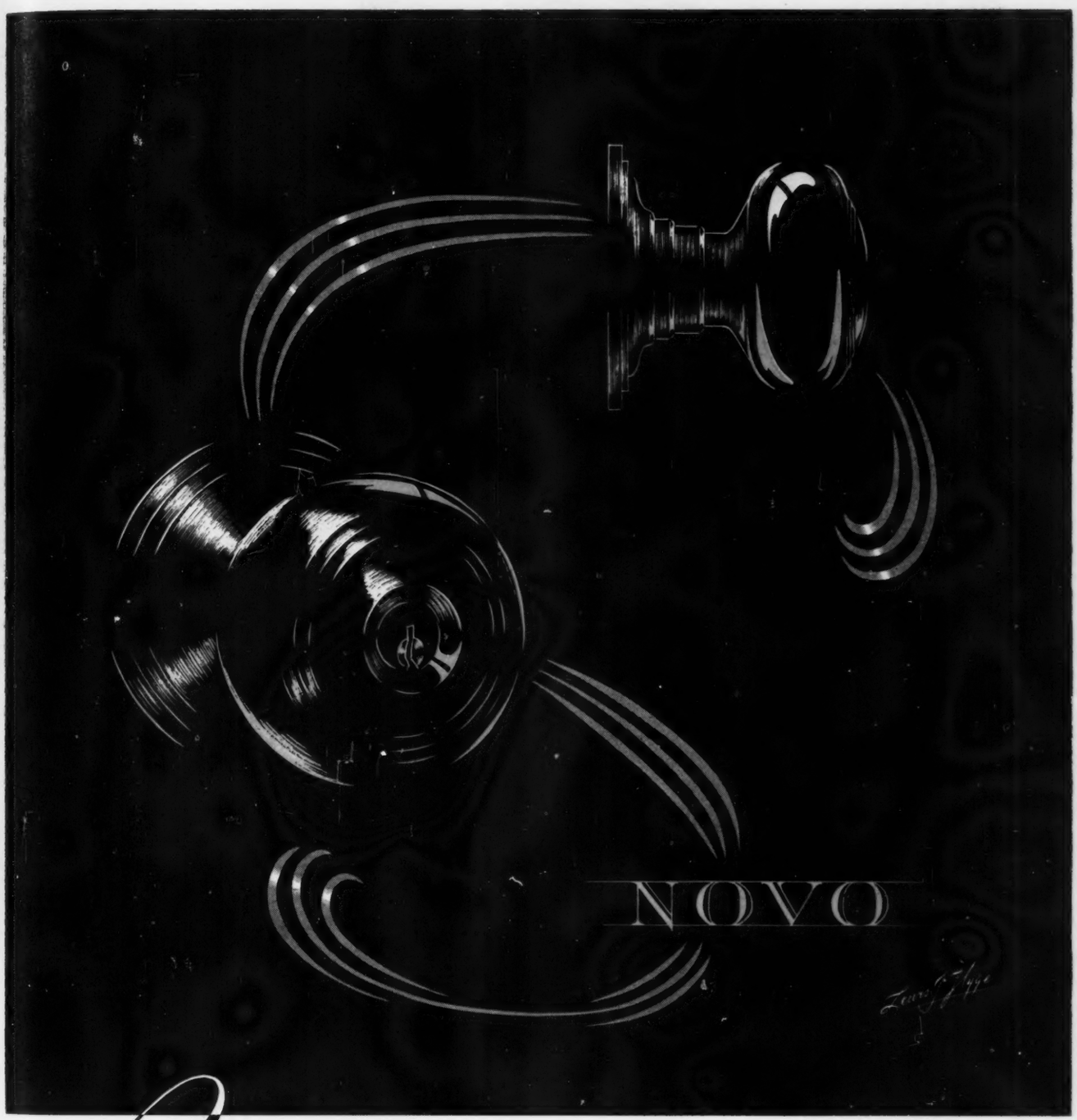


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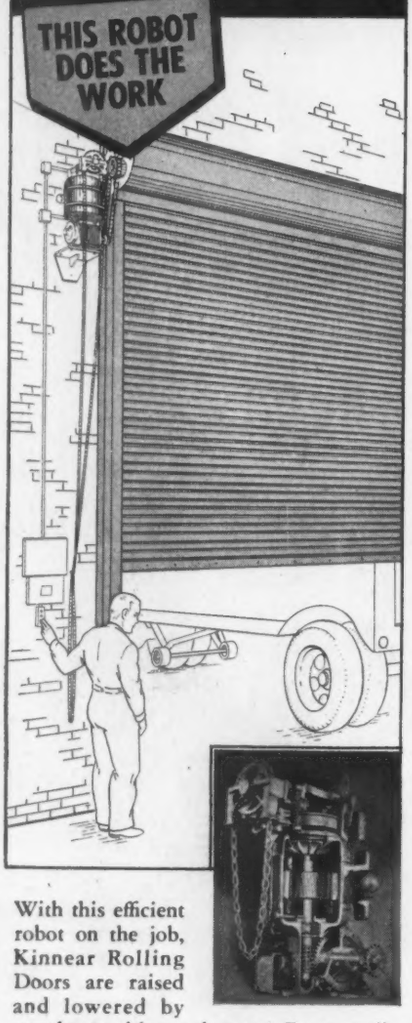


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# Reviews

*(Continued from page 116)*

Federation of Australia and the Illuminating Engineering Society of Australia. This issue is profusely illustrated with U.S.A. building projects, while the editorials bristle with challenges to the Australian government to busy up and do likewise. The U. S. Office of War Information furnished the material for many of the excellent articles.

In describing private enterprise housing projects such as Parkchester in the Bronx, where four-room apartments and community playgrounds rent for $50 a month, the journal comments, "Everything costs about three times as much in America as it would cost in Australia. Yet the rents are moderate, $14 a room with heat and light." A discussion of the lack of water in Australia reveals that the continent has a dead heart, from which aridity is radiating to embrace two-thirds of the land. Before the days of the Pyramids, there existed a luxuriant garden area, the Lake Eyre basin, which received water drained from 500,000 miles of country. The basin, which has no outlet, is in the process of utter desiccation. This central portion of Australia died for want of water. "If Australia were pagan, water would be worshipped as a deity."

**THE ARCHITECT'S JOURNAL**
**45, The Avenue, Cheam, Surrey**
**August 30, 1945**

Astragal comments on the change for the better in Australia's house design, as recorded by George R. Hann in his *Book of Low Cost Homes*, published in Sydney. The character of workmen's houses is direct and attractive—of a bounding vitality, showing that Australian eyes are now fixed on the world at large and that distinctive building may soon issue forth from the melting pot of the Pacific.

The near hopelessness of a national planning scheme for Poland is given by Stanislav Malessa, director of Poland's National Planning Office, in an article, with charts, showing needed systems of communication, waterways, development of heavy industry, in a country half candle-lit. The need was only realized after much striving to find the proper directive lines for regional development and planning. Nation-wide industrialization, changing Poland from a semi-feudal society, overweighted on the side of agriculture, into a balanced community, will solve the physical planning problem and raise the general standard of living, if, indeed, all this can be accomplished.


STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.
REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912

Of PROGRESSIVE ARCHITECTURE-PENCIL POINTS published monthly at New York, N. Y., for October 1, 1945.

State of New York } ss.
County of New York }

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared Philip H. Hubbard, who, having been duly sworn according to law, deposes and says that he is the President and Publishing Director of the Corporation publishing PROGRESSIVE ARCHITECTURE-PENCIL POINTS and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations to wit:

1. That the names and addresses of the publisher, editor, associate editor, and business manager are:

Publisher, Reinhold Publishing Corporation, 330 West 42nd St., New York City; Editor, Kenneth Reid, Hays Hill Road, Pleasantville, N. Y.; Publishing Director, Philip H. Hubbard, 2 Bon Mar Road, Pelham Manor, N. Y.; Business Manager, John G. Belcher, Christie Hill Road, Darien, Conn.

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PHILIP H. HUBBARD,
*Publishing Director and President.*

Sworn to and subscribed before me this 24th day of September, 1945.
(My commission expires March 30, 1946)

CURVILLE C. ROBINSON, *Notary Public*